CXR telcom

MAINTENANCE PRACTICE

for the

701A/702A

TRANSMISSION TEST SETS

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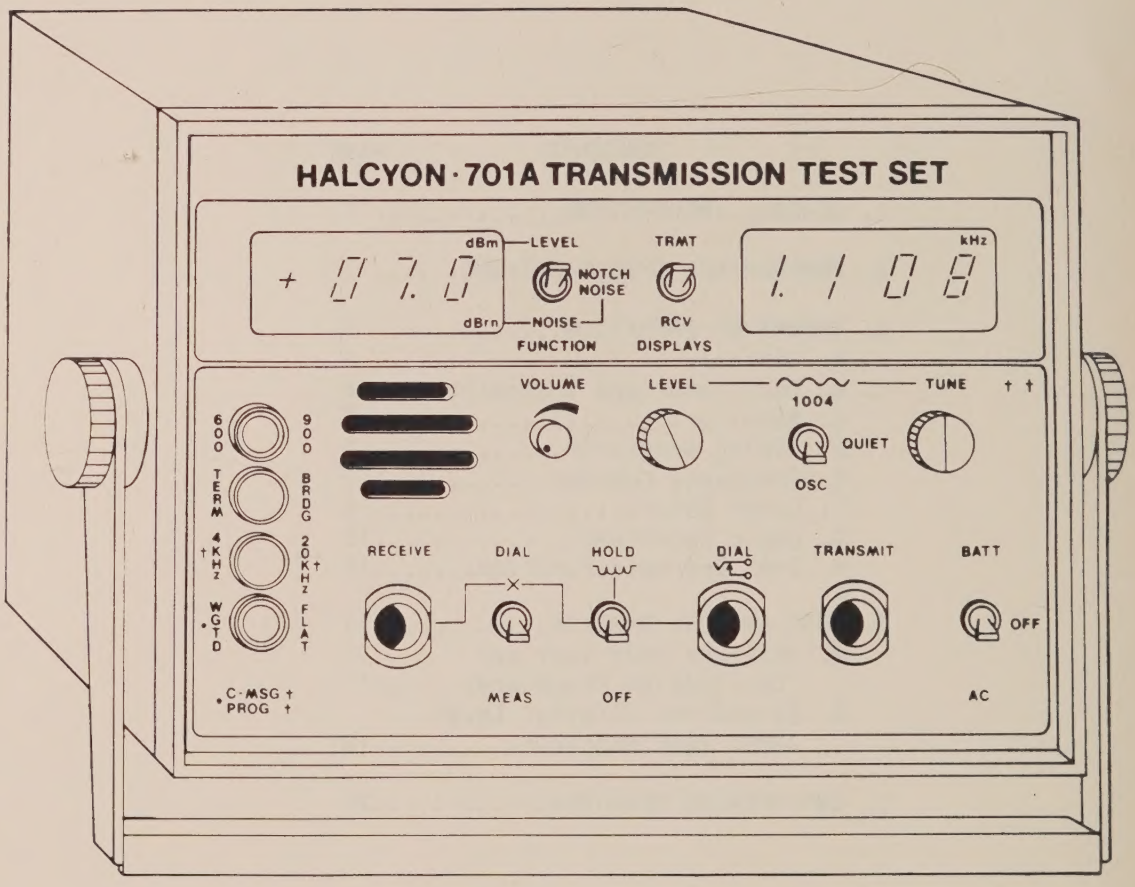

HALCYON·701A TRANSMISSION TEST SET
dBm
LEVEL
+ 07.0
dBrn
NOISE
FUNCTION
NOTCH
NOISE
TRMT
RCV
DISPLAYS
kHz
1.109
VOLUME
LEVEL
1004
TUNE
600 TERM
900 BRDG
4KHz WGTD
20KHz FLAT
QUIET
OSC
RECEIVE
DIAL
HOLD
DIAL
TRANSMIT
BATT
OFF
C-MSG
PROG
MEAS
OFF
AC

Fig. 1

1. GENERAL INFORMATION

1.01 The Halcyon 701A and 702A are voice-band transmission test sets with level, noise, and frequency measurement capabilities in conformance with Bell Technical Reference PUB 41009. The 701A is compact, lightweight, and comes equipped with batteries (optional) to make the unit a completely portable test instrument. (See Figure 1.) The 702A is the rack-mount version of the 701A, requiring only 1-3/4 inches of mounting space. (See Figure 2.) The 702A normally operates from ac power, but may be equipped for operation from -48 Vdc office battery supplies. Special features include the following:

1.02 Dual Digital Displays. Different colored displays provide positive differentiation between Level/Noise (red) and Frequency (green) digital readouts.

1.03 Holding Tone Oscillator. A 1004-Hz holding tone is provided for use in measuring loss, noise with tone, transient impairments or other tests which require a tone having precise frequency control and spectral purity.

1.04 Voice Frequency Channel. For VF measurements, the transmitter bandwidth is from 50 Hz to 4 kHz. C-message and 3-kHz flat weighting networks are provided to measure noise on such circuits. A 1010-Hz notch filter can be used to notch out the 1004-Hz tone. This notched noise measurement mode is recommended for all transmission facilities with PCM or compandored carrier links.

1.05 Program Channel. For program channel measurements the transmitter bandwidth is from 4 kHz to 20 kHz. A program channel weighting network and a 15-kHz flat weighting network is provided to measure noise on such circuits. This feature is useful in checking local loops for conformance with digital data transmission or wideband program channel requirements.

1.06 Battery Charge Status Indications (701A only). Battery power supply circuits have been configured so that the 5-volt display and associated logic supply will discharge first, instead of the 9-volt supply that powers the basic measurement and signal-generation circuitry. Consequently, the display operation will give visual indication of a marginal battery charge. This visual indication will appear as a random but continuous flickering of either the Level/Noise or the Frequency display. When this occurs, battery operation should be discontinued and a recharge initiated before the unit is used again.

1.07 The 702A may be equipped for operation from a -48 Vdc office battery in facilities where this is the only source of power.

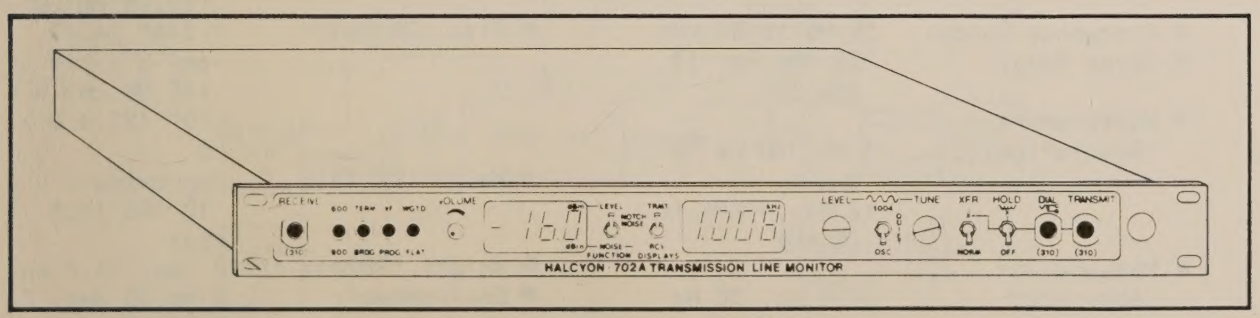


Fig. 2

2. PERFORMANCE SPECIFICATIONS

2.01 Transmitter:

- Holding Tone: 1004 Hz +/-0.1 Hz
- Oscillator Range: 50 Hz to 20 kHz (2 ranges)
- Output Level Range: -40 dBm to +13 dBm
- Tuning Control: Ten Turn Pot
- Level Control: Ten Turn Pot
- Distortion: <-50 dB, 200 Hz to 4 kHz
  <-40 dB, 50 Hz to 200 Hz and 4 kHz to 20 kHz

2.02 Receiver:

- Frequency Range: 50 Hz to 20 kHz
- Frequency Response: +/-0.1 dB, 200 Hz to 4 kHz
  +/-0.2 dB, 4 kHz to 15 kHz
  +/-0.5 dB, 50 Hz to 20 kHz
- Level Range: -50 dBm to +13 dBm
- Measurement Resolution: 0.1 dB
- Measurement Accuracy @ 1 kHz: +/-0.1 dB, -30 dBm to +13 dBm
  +/-0.2 dB, -30 dBm to -50 dBm

2.03 Frequency Counter:

- Frequency Range: 50 Hz to 20 kHz
- Level Range: -50 dBm to +13 dBm
- Measurement Resolution: 1 Hz, 50 Hz to 4 kHz
  10 Hz, 4 kHz to 20 kHz
- Measurement Accuracy: +/-1 Hz, 50 Hz to 4 kHz
  +/-10 Hz, 4 kHz to 20 kHz

2.04 Noise Measurement:

- Weighting Networks: C-Message, 3 kHz Flat Program, 15 kHz Flat
- Level Range: 10 dBrn to 99 dBrn
- Notch Attenuation: <-50 dB, 995 to 1025 Hz
- Measurement Resolution: 1 dB
- Measurement Accuracy: +/-1 dB

2.05 General:

- Input Impedance: 600 or 900 ohms 25K, Bridged
- Output Impedance: 600 or 900 ohms
- Power (701A): NiCd Batteries or 117/230 Vac 50/60 Hz
- Battery Capacity (701A): 5 hrs. Nominal
- Charger (701A): 117/230 Vac
- Charging Time (701A): 8 Hrs. Nominal
- Power (702A): -48 Vdc Office Battery or 117/230 Vac, 50/60 Hz
- Size (701A): 5" (12.7 cm) H x 7" (17.78 cm) W x 12" (30.48 cm) D
- Size (702A): 1 3/4" (4.44 cm) H x 19" (48.26 cm) W x 10" (25.4 cm) D
- Weight (701A): Approximately 10 lbs (4.5 kg)
- Weight (702A): 8 lbs. (3.6 kg)
- Environment: 0 to 50 deg. C
  0 to 90 percent Relative Humidity

3. THEORY OF OPERATION

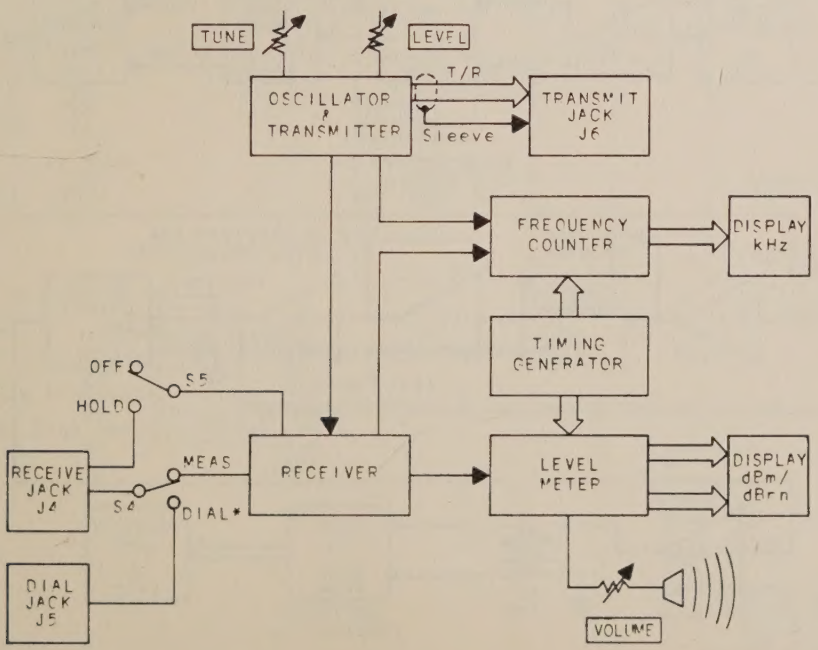
A. General

3.01 This section contains the theory of operation for the five major circuits of the 701A and 702A units. These are: (1) oscillator and transmitter, (2) receiver, (3) timing generator, (4) frequency counters and (5) level meter.

3.02 Block Diagrams: Figure 3 is a simplified functional block diagram of the 701A. The diagram is equally applicable to the 702A unit except as noted. Each of the sections depicted in Figure 3 is expanded by a detailed block diagram describing that particular section. The major sections shown are functional blocks and do not correspond to physical blocks in the actual unit. The physical locations of all major components are listed in the detailed block diagrams and can be correlated to the appropriate schematic diagram for detailed analysis of the circuit. For example, referring to Figure 4, assume you want to locate the VCO circuit on the schematic diagram. The block representing the VCO is labeled VCO and is further identified as IC11 and 1102; this means that the VCO circuit is an IC chip which is identified as IC11 and is located on schematic diagram SD-1102-00. (See Section 5.) The physical location of the chip is shown on the associated assembly drawing, ED-1102-00.

3.03 Schematic Diagrams: The schematic diagrams for the 701A and 702A units are located in Section 5 in numerical order. Three of the printed circuit boards (PCBs) used in the 701A unit are used also in the 702A unit. Hence, the schematics for these boards will not be duplicated and only one schematic diagram per board appears as reference for both units. The PCBs that are common to both units and share the same schematics are:

SD-1100-00	Level Meter PCB
SD-1101-00	Digital Level PCB
SD-2084-01	Termination PCB



*Refer to paragraph 3.21 for description of different dial and hold functions available.

Fig. 3

B. Oscillator and Transmitter (Figure 4)

3.04 VCO: The frequency of the VCO is controlled by the 4 kHz/20 kHz range switch and the TUNE control. The wiper of the TUNE control (R3) controls two current sources via buffer IC13. One current source controls the down ramp and the other current source controls the up ramp of the symmetrical triangular waveform output of the VCO (IC11). The 4 kHz/20 kHz range switch selects the different timing capacitors to the VCO - depending on the frequency range selected.

3.05 Sine Wave Shaping: The sine wave shaping circuit converts the VCO triangular waveform output into a sine wave via a diode network. The diodes are biased and conduct at programmed points of the input waveform to change the transfer function of the shaping circuit.

3.06 Oscillator Select: The 1004/QUIET/OSC switch controls the oscillator select, a dual analog switch. The selected oscillator signal is buffered by IC17, attenuated by the LEVEL control and buffered by IC20. The gain of IC20 is changed by the 600/900 termination switch to provide constant signal power across the termination. The gain is X1.22 for 900 ohms and X1 for 600 ohms.

3.07 Transmitter: The oscillator output signal from IC20 is fed via Quiet Select IC21, a dual analog switch, amplified by IC22, 23, and transformer coupled to the TRANSMIT jack J6. The oscillator output can be disabled by the dual analog switch IC21 when the 1004/QUIET/OSC switch is placed in the QUIET position.

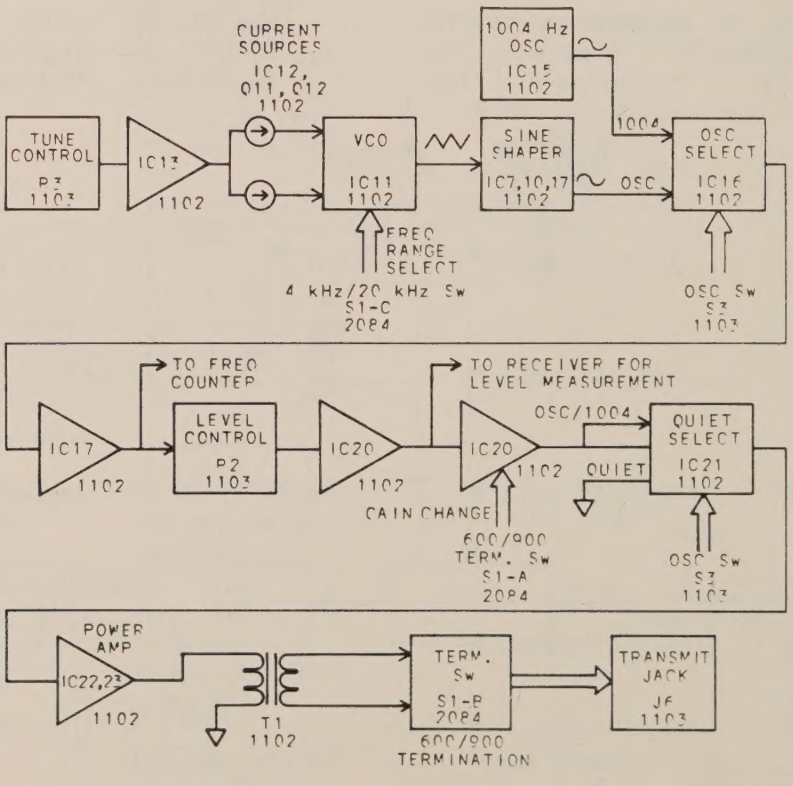


Fig. 4

C. Receiver (Figure 5)

3.08 Input Circuits: The hold circuit (Q4-Q6) is a constant-current source which is connected to the tip and ring contacts of the RECEIVE jack when the HOLD/OFF switch is placed in the HOLD position. The DIAL jack via its shorting contacts is connected to the RECEIVE jack when the DIAL/MEAS switch is placed in the DIAL position. The gain of IC10 is changed by the 600/900 termination switch to compensate for the power level change across the line termination. The 701A and 702A sample-and-hold circuits are further described in paragraphs 3.21 through 3.26.

3.09 Filter: The output from amplifier IC10 is fed to the following points: (1) directly to the frequency counter circuitry on the Common Analog PCB; (2) to Filter Select A, IC13 (a quad analog switch); (3) C-message filter; (4) program filter; and (5) 3 kHz filter. When IC13 is enabled by Filter Select Logic (IC17-19) the output from IC13 is buffered by IC9 and applied directly to Filter Select B (IC14) as a "receive level" signal, to the 15 kHz Filter, and the Notch Filter. When IC14 is enabled by the Filter Select Logic, one of its four inputs is switched to the level meter circuitry via IC12 and to the VOLUME control. The four selectable inputs are: (1) noise, (2) unfiltered receive level, (3) unfiltered transmit level, or (4) notch noise.

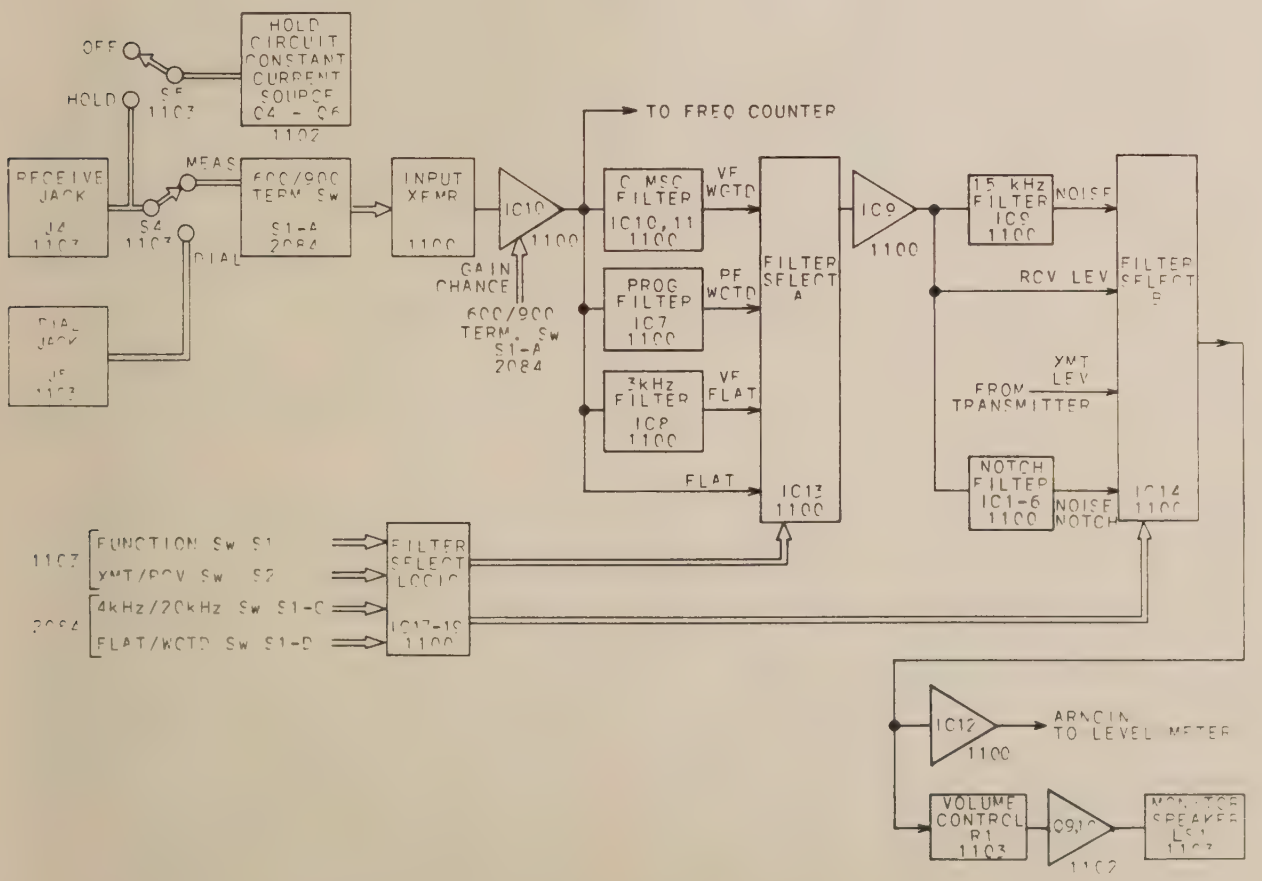


Fig. 5

D. Timing Generator (Figure 6)

3.10 Frequency Dividers: The 1-MHz oscillator signal is used by the Level Meter counting circuits. It is also divided by 1000 to obtain a 1-kHz signal (SCNFRQ) which is used by the Level Meter and Frequency Counter to multiplex the counter digits onto the decoder input lines. The 1-kHz signal is also divided by 10 to obtain a 100-Hz signal. This signal is in turn divided by 12 by two separate counters; one counts on the positive edges of the 100-Hz signal, and the other counts on the negative edges. Thus, the two counters are out of phase by one-half of the input period. The third stage of one counter provides a divide-by-6 output, which is further divided by 10 for use in the autoranging circuit in the Level Meter.

3.11 Timing Logic: Figure 7 shows the timing signals produced by combinations of the two divide-by-12 counters. Both counters count in binary until $\overline{C} \cdot \overline{D}$ resets both counters. The diagram shows the logic equation for each signal; these signals will be explained fully in the Frequency Counter and Level Meter descriptions.

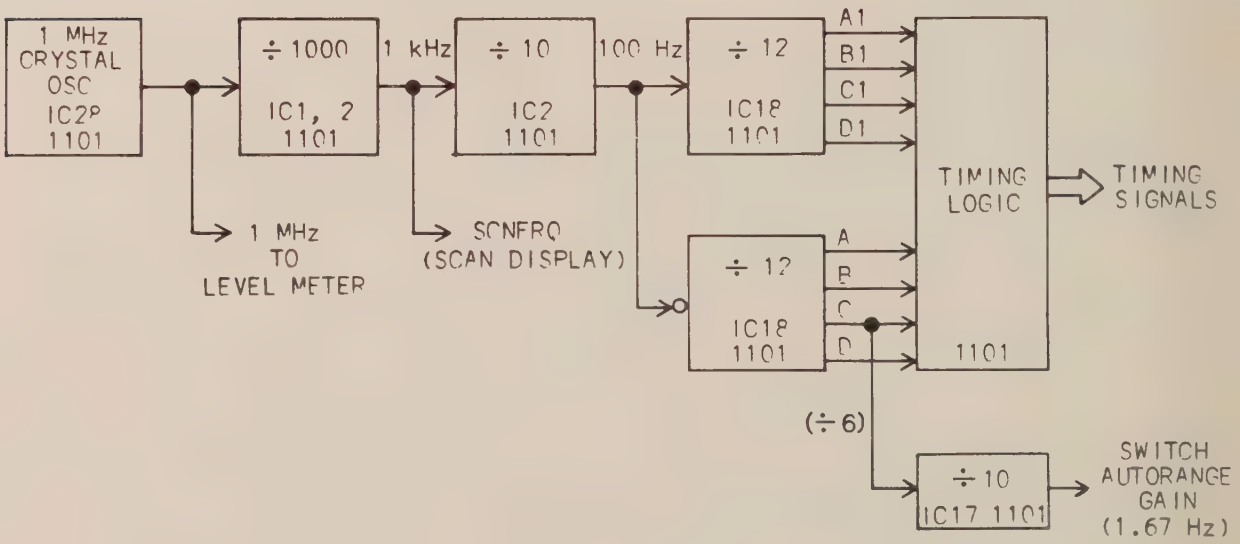


Fig. 6

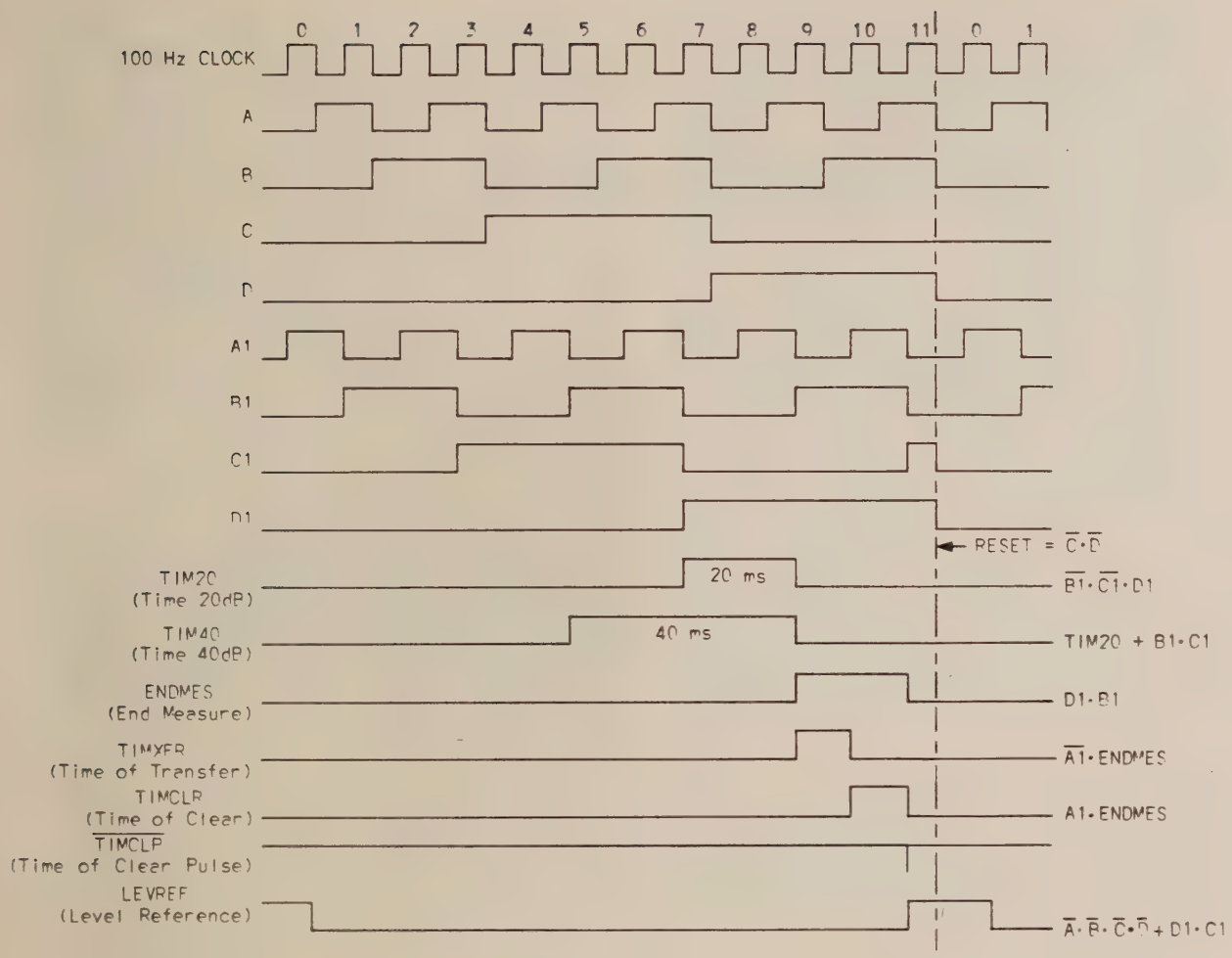


Fig. 7

E. Frequency Counter (Figure 8)

3.12 Input Circuits: The TRMT/RCV switch determines which input signal is selected. The low-pass filter removes noise spikes, and the square wave converter clips the signals to form a digital signal. The Frequency Select gating circuitry gates the square wave output or the output of a X10 frequency multiplier. The multiplier makes a 1 Hz resolution possible for a counter period of 0.1 second. The multiplier consists of a VCO, phase-locked loop and a divide-by-10 counter. The X10 signal is divided by 10 and compared with the input signal to correct the VCO frequency.

3.13 Counter and Display. The timing cycle begins with a $\overline{\text{TIMCLP}}$ signal (Time of Clear Pulse) which clears the 4-digit counter. The clear pulse is formed by differentiating the trailing edge of the TIMCLR signal (see Figure 7). The input signal is counted for 100 ms; the TIMXFR signal (Time of Transfer) overrides the input signal and transfers the counter contents to a storage register. The contents of the register are

continuously multiplexed onto the four bit data lines, one digit at a time. The multiplexing is controlled by the 1-kHz SCNFRQ (Scan Frequency) signal from the Timing Generator. The bit data is decoded by a BCD-to-seven segment decoder which controls the display segments through driver transistors.

3.14 Corresponding segments of all digits are wired together. The four-digit data lines indicate which digit is being multiplexed onto the bit data lines. Each digit data line feeds a driver which connects to the anode of all segments for a single digit. Therefore, any given segment of the display is lit by a coincidence of the segment driver and the digit driver. The display is blanked when the switches are set to QUIET and TRMT position. The decimal point is determined by the 4 kHz/ 20 kHz switch. The 4-Hz position gives X.XXX kHz; the 20-kHz position gives XX.XX kHz.

F. Level Meter (Figure 9)

3.15 Detectors: The input to the Level Meter is derived from Receiver Filter Select B (Figure 5), and consists of receiver noise, receiver level, receiver notch noise, or transmitter level. The signal is fed to an amplifier with a gain of 0, +20, or +40 dB. The gain is set by using the autoranging signal to switch, via a dual analog switch, feedback resistors in the amplifier. The output of the amplifier is fed to an Average Detector and a Peak Detector. The Average Detector output is selected for level measurements. The two detector outputs are summed to form a quasi-rms signal for noise measurements. The selected detector output, noise or level, is filtered to yield a dc output.

3.16 The dc output from the filter is compared with reference voltages that represent under-range, over-range, and out-of-range thresholds. The out-of-range comparator blanks the display; the under-range and over-range comparator outputs drive the Autorange Gain Switching logic. A two-bit counter stores the gain data (SD-1101-00):

AGC40 (40 dB gain) = Q1 (least significant bit)
AGC20 (20 dB gain) = Q2 (most significant bit)
$\overline{AGC}$ (0 dB gain) = $\overline{Q1} \cdot \overline{Q2}$

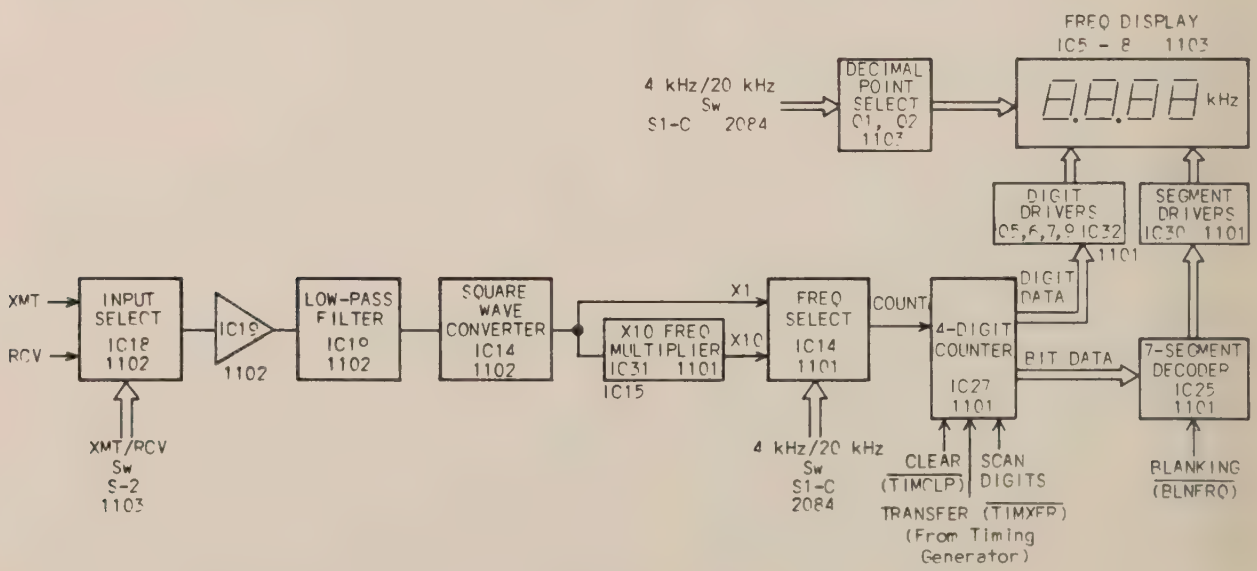


Fig. 8

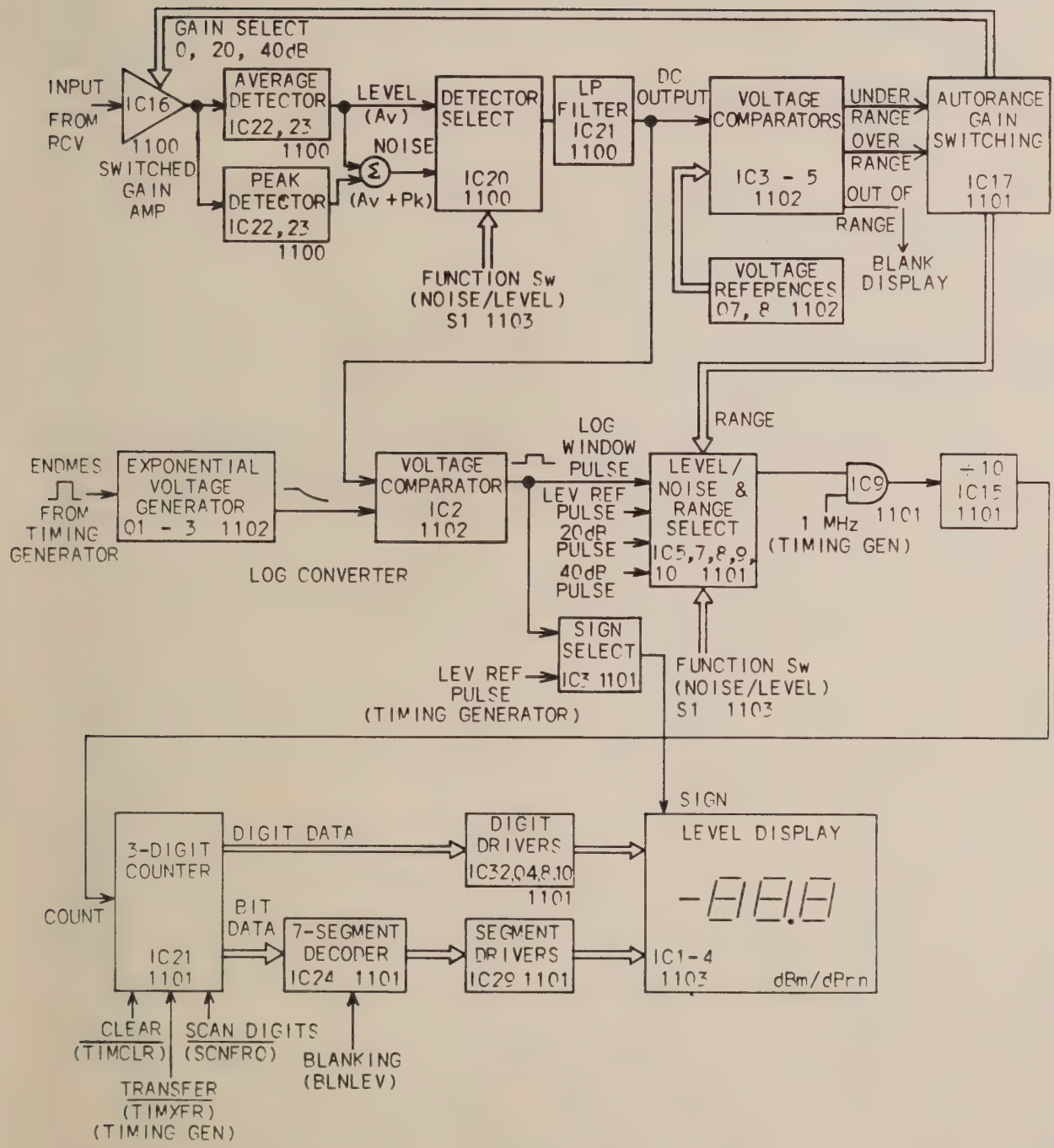

GAIN SELECT
0, 20, 40dB
INPUT
FROM
RCV
IC16
1100
SWITCHED
GAIN
AMP
AVERAGE
DETECTOR
IC22, 23
1100
PEAK
DETECTOR
IC22, 23
1100
LEVEL
(Av)
NOISE
(Av + Pk)
DETECTOR
SELECT
IC20
1100
LP
FILTER
IC21
1100
DC
OUTPUT
VOLTAGE
COMPARATORS
IC3 - 5
1102
UNDER
RANGE
OVER
RANGE
OUT OF
RANGE
AUTORANGE
GAIN
SWITCHING
IC17
1101
BLANK
DISPLAY
VOLTAGE
REFERENCES
07, 8 1102
FUNCTION Sw
(NOISE/LEVEL)
S1 1103
RANGE
LOG
WINDOW
PULSE
ENDMES
FROM
TIMING
GENERATOR
EXPONENTIAL
VOLTAGE
GENERATOR
Q1 - 3 1102
VOLTAGE
COMPARATOR
IC2
1102
LOG CONVERTER
LEV REF
PULSE
20dB
PULSE
40dB
PULSE
LEVEL/
NOISE &
RANGE
SELECT
IC5,7,8,9,
10 1101
IC9
1101
1 MHz
(TIMING GEN)
÷10
IC15
1101
SIGN
SELECT
IC3 1101
LEV REF
PULSE
(TIMING GENERATOR)
FUNCTION Sw
(NOISE/LEVEL)
S1 1103
SIGN
3-DIGIT
COUNTER
IC21
1101
COUNT
DIGIT DATA
DIGIT
DRIVERS
IC32,04,8,10
1101
LEVEL DISPLAY
-8.8
IC1-4
1103
dBm/dPrn
BIT
DATA
7-SEGMENT
DECODER
IC24 1101
SEGMENT
DRIVERS
IC29 1101
CLEAR
(TIMCLR)
SCAN DIGITS
(SCNFRQ)
BLANKING
(BLNLEV)
TRANSFER
(TIMXFR)
(TIMING GEN)

Fig. 9

The counter steps for any of the following conditions:

Over-range • AGC40

+ (under-range + over-range) • AGC20

+ under-range • $\overline{AGC}$

3.17 A 1.67-Hz signal (CLK2HZ) from the Timing Generator is used as a counter clock. The counter resets whenever Q1•Q2 occurs; note that the counter steps from the AGC20 state for either over-range or under-range. The over-range condition steps the counter to the $\overline{AGC}$ state by resetting the counter. The under-range condition steps the counter once more to reach the AGC40 state. Figure 10 shows how the gain is switched for a decreasing signal and an increasing signal. Note the 2-dB hysteresis for the two cases. This avoids excessive gain switching for signals which fluctuate at the gain boundaries. The hysteresis is provided by the voltage comparators. The under-range comparator turns on for input voltages less than 0.074 volts, while the over-range comparator turns on for inputs greater than 1.11 volts. The autoranging gain signals are fed back to the input amplifier to set the gain, and are also fed to the Level Meter Logic to correct the display.

3.18 Log Converter: Figure 11 shows the operation of the log converter. The ENDMES (End Measure) pulse from the Timing Generator charges a capacitor to a reference voltage. At the end of the pulse, the capacitor is allowed to discharge through a resistor. The capacitor voltage is buffered by a high impedance amplifier and compared with the dc voltage that represents the input signal level. The output of the comparator is high from the start of the ENDMES pulse until the capacitor voltage is less than the input voltage. The width of the comparator output is inversely proportional to the log of the input voltage.

3.19 Counter Logic: The output pulse of the log converter comparator (LOGWND) is used as a "window" to gate 1 MHz clock pulses to the 3-digit counter which drives the level display. Addi-

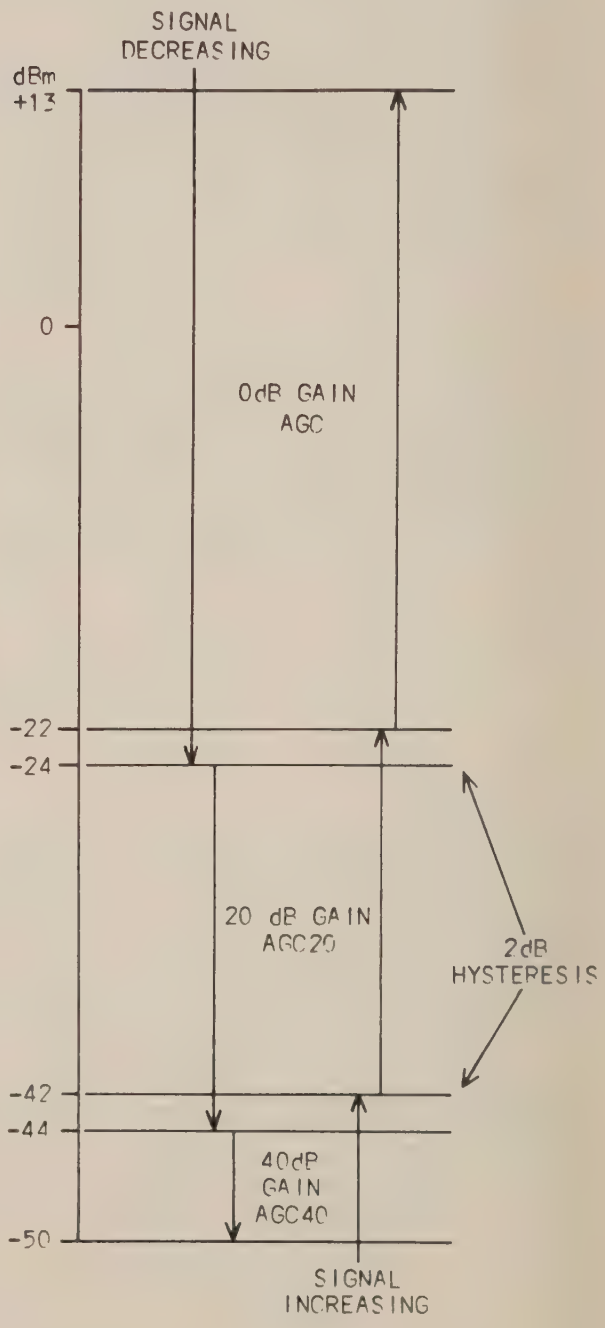


Fig. 10

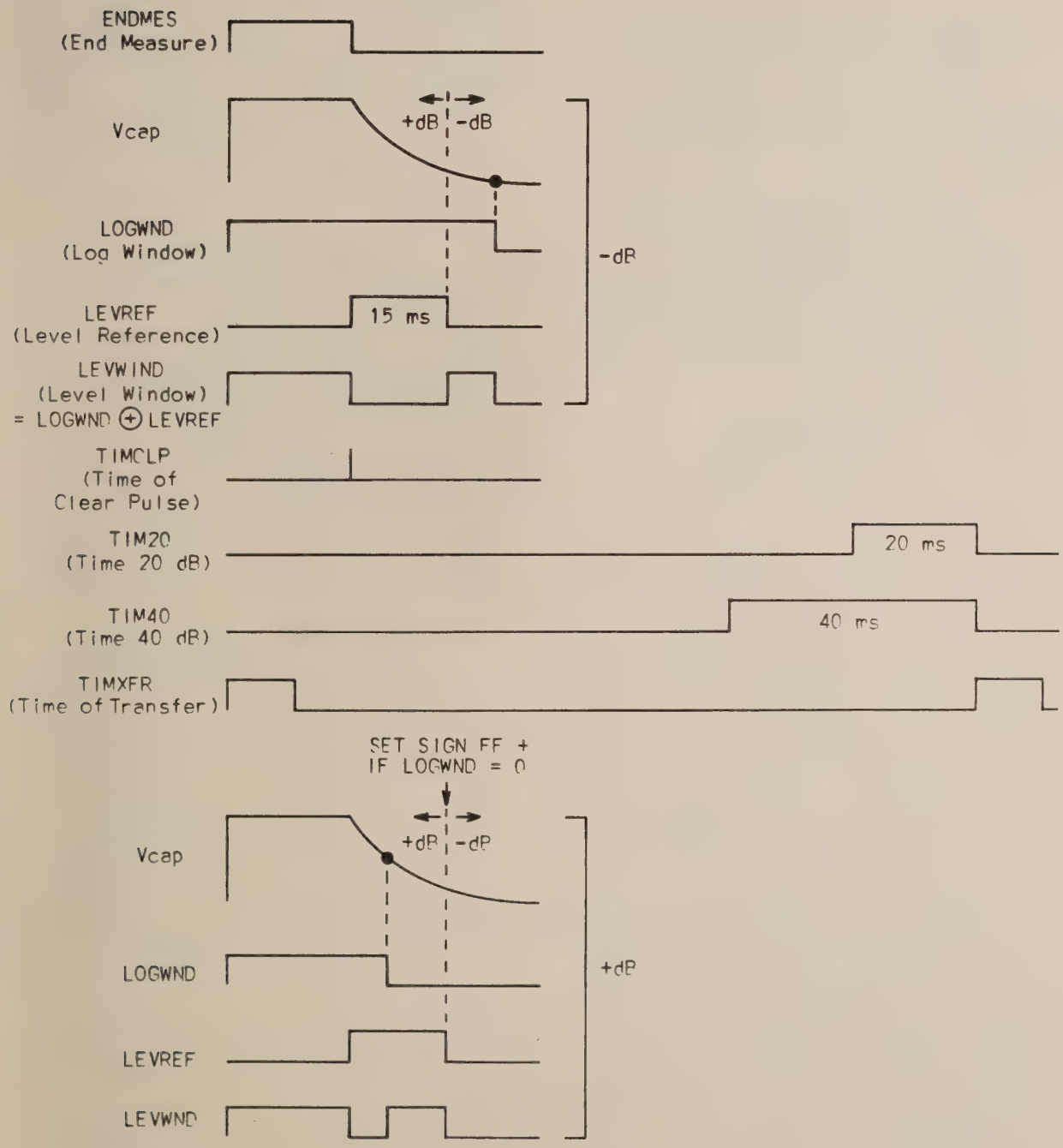

ENDMES
(End Measure)
Vcap
+dB
-dB
LOGWND
(Log Window)
-dB
LEVREF
(Level Reference)
15 ms
LEVWIND
(Level Window)
= LOGWND ⊕ LEVREF
TIMCLP
(Time of
Clear Pulse)
TIM20
(Time 20 dB)
20 ms
TIM40
(Time 40 dB)
40 ms
TIMXFR
(Time of Transfer)
SET SIGN FF +
IF LOGWND = 0
Vcap
+dB
-dB
LOGWND
+dB
LEVREF
LEVWND

Fig. 11

tional window pulses are added to correct the display for the selected gain.

(a) Negative dB Level Measurements: Figure 11 shows the timing for level measurements. The first case shown is a negative dB level. A LEVWIND (level window) signal is formed when:

$$LEVWND = LOGWND \oplus LEVREF$$

LEVREF (level reference) is a 15 ms pulse from the timing generator. The timing cycle begins with the clearing of the counter with TIMCLP. The counter input for level measurements is:

$$1\ MHz \cdot TIMXFR \cdot (LEVWND + AGC20 \cdot TIM20 + AGC40 \cdot TIM40)$$

Only the portion of LOGWND that follows the end of LEVREF is counted. The portion during LEVREF is blocked by the exclusive OR; the portion before LEVREF is cleared by TIMCLP. Note that the count increases as the input level decreases. The count pulses are divided by 10 and fed to the 3-digit counter. (The counter is actually a 4-digit counter; the LSD is not displayed. Therefore, an additional division by 10 is inserted.)

(b) Scaling: Proper scaling of the display is provided by the TIM20 and TIM40 pulses. The 20 ms TIM20 pulse is gated by AGC20 to add 20,000 pulses to the count. Dividing these pulses by 10^2 results in a display of 200. Since the display is in tenths of dB, 20.0 dB is added. TIM40 is used in a similar manner for the 40 dB range, and neither signal is used for the 0 dB range. The contents of the counter are transferred to a storage register at the TIMXFR pulse (Time of Transfer). Counting is blocked during this pulse.

(c) Positive dB Level Measurements: The second case shown in Figure 11 is a positive level measurement. The counter is enabled from the end of LOGWND until the end of LEVREF. Note that the count decreases as the input level decreases. The sign of the display is determined by a FF, which is set high (positive signal) if LOGWND is low at the end of LEVREF. The displayed + sign is formed by a combination of the - sign and a vertical line.

(d) Noise Measurements: Noise measurements are displayed in reverse notation, i.e., dBrn. 0 dBm corresponds to 90 dBrn and -90 dBm corresponds to 0 dBrn. Figure 12 shows the log conversion. A NOIWND (noise window) signal is formed when:

$$NOIWND = (\overline{TIM40} \cdot \overline{LOGWND}) + TIMCLR$$

The timing cycle begins with the clearing of the counter with TIMCLP. The counter input for noise measurements is:

$$1\ MHz \cdot \overline{TIMXFR} \cdot (NOIWND + TIM20 \cdot AGC20 + TIM40 \cdot \overline{AGC20} \cdot \overline{AGC40})$$

Figure 12 shows that NOIWND enables the counter from the end of LOGWND to the beginning of TIM40. Note that the count decreases as the noise level decreases. Proper scaling is provided by adding the TIM20 pulse for the 20 dB range, TIM40 for the 0 dB range, or neither for the 40 dB range. TIMXFR blocks the counting at the end of the cycle and transfers the counter contents to the storage register. The counter requires at least one additional count pulse to transfer the counter contents. This requirement is met by the TIMCLR term in the equation for NOIWND.

3.20 Level Display: The operation of the level display is similar to that of the Frequency Meter Display (paragraph 3.13). The sign, decimal point, and tenths digit are blanked for noise measurements. The level display

is blanked with the plus sign on whenever a level measurement exceeds +13 dBm. Conversely, the display is blanked with the minus sign on whenever the controls are set to TRMT and QUIET position. The entire display is blanked when the controls are set to TRMT and NOISE or NOTCH NOISE.

G. Logic Equations

$$ENDMES = D1 \cdot B1$$
(End Measure)

$$TIM20 = C1 \cdot (\overline{\overline{D1} + B1}) = \overline{C1} \cdot D1 \cdot \overline{B1}$$
(Time 20 dB)

$$TIM40 = B1 \cdot \overline{C1} + TIM20 = B1 \cdot C1 + \overline{C1} \cdot D1 \cdot \overline{B1}$$
(Time 40 dB)

$$TIMXFR = \overline{A1} \cdot ENDMES = \overline{A1} \cdot B1 \cdot D1$$
(Time of Transfer)

$$TIMCLR = A1 \cdot ENDMES = A1 \cdot B1 \cdot D1$$
(Time of Clear)

$$LEVREF1 = C + D + A + B$$

$$LEVREF = LEVREF1 + (D1 \cdot C1)$$
(Level Reference)

$$LEVWND = LOGWND \cdot \overline{LEVREF} + \overline{LOGWND} \cdot LEVREF = LOGWND \oplus LEVREF$$
(Level Window)

$$NOIWND = TIMCLR + (\overline{TIM40} \cdot \overline{LOGWND})$$
(Noise Window)

$$COUNT = 1MHZ \cdot \overline{TIMXFR} \cdot [\overline{(LEVEL} \cdot (TIM20 \cdot AGC20 + TIM40 \cdot \overline{AGC20} \cdot \overline{AGC40} + NOIWND)]$$

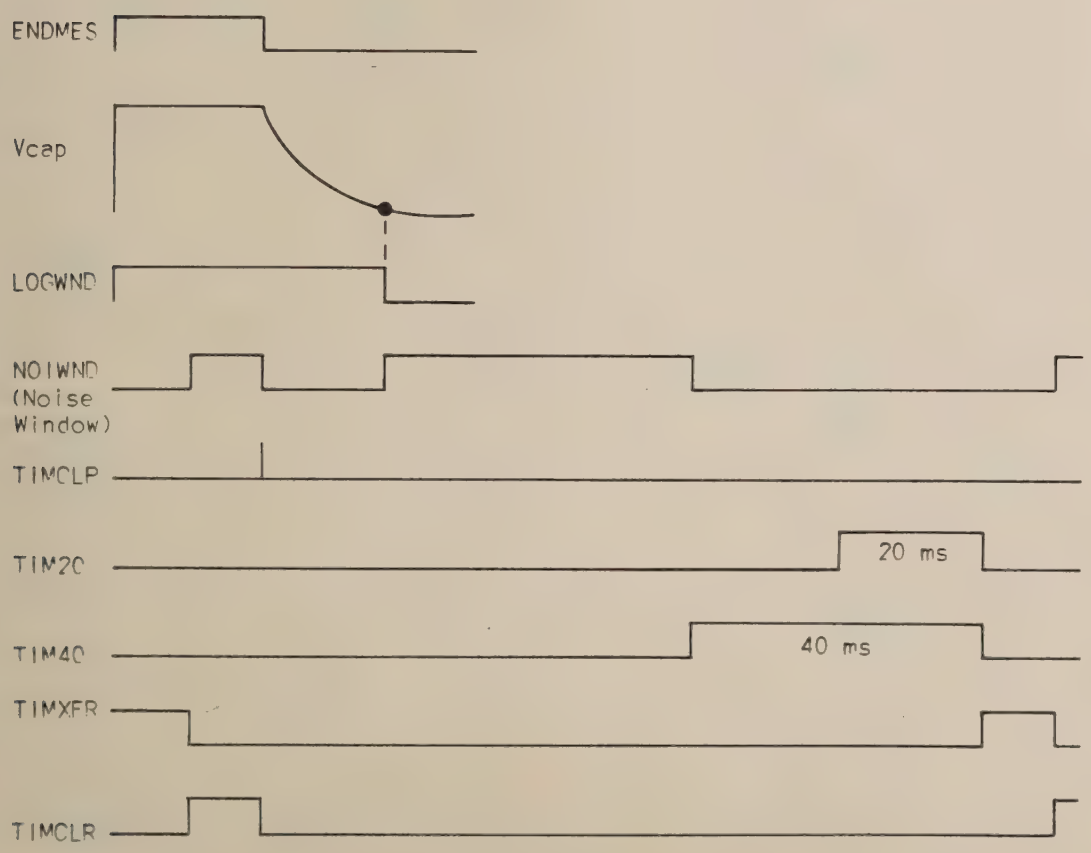


Fig. 12

+ LEVEL • (AGC40 • TIM40 + AGC20 • TIM20 + LEVWND)

NEGSGN = BLNFRQ + LEVEL
(Negative Sign)

POSSGN = LEVEL • FF3 (+ sign formed by $\overline{POSSGN \cdot NEGSGN}$)
(Positive Sign)

$FF3_J = \overline{LOGWND}$ [(FF3 (IC3-1, 1101) is 1 for +, 0 for -)]

$FF3_K = LOGWND$

$FF3_{CLK} = \overline{LEVREF}$

BLNFRQ = QUIET • XMT
(Blank Frequency)

BLNLEV = OUTRNG + QUIET • XMT + $\overline{LEVEL}$ • XMT
(Blank Level)

$\overline{FRQCNT}$ = VF • INPUT X10 + $\overline{VF}$ • INPUT + TIMXFR
(Frequency Count)

AGC20 = Q2 (IC17-12, 1101)
(Auto Gain Control 20)

AGC40 = Q1 (IC17-11, 1101)

$\overline{AGC} = \overline{Q1} \cdot Q2$

Switch AGC = CLK2HZ • [UNDRNG • $\overline{AGC20}$ • $\overline{AGC40}$ + (UNDRNG + OVRRNG) • AGC20 + OVRRNG • AGC40)]

UNDRNG - Under-range
OVRRNG - Over-range

Reset AGC = Q1 • Q2

VF = 4kHz switch position

PROG = 20kHz switch position

LEVREC = LEVEL • REC

LEVXMT = LEVEL • XMT

FLAT = LEVEL + $\overline{(WGTD + VF)}$

$VFWGTD = \overline{LEVEL} \cdot VF \cdot WGTD$
(C Message Filter)

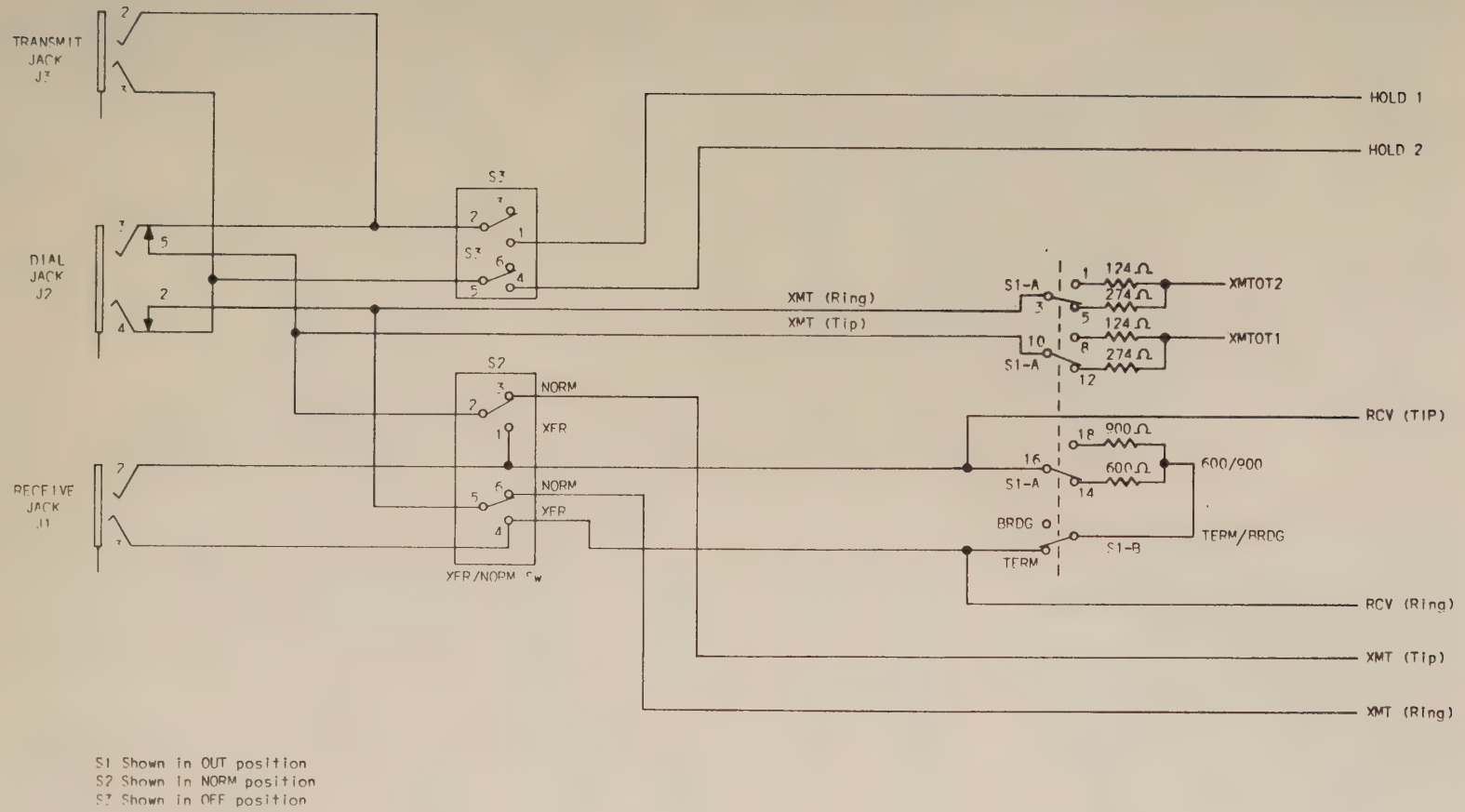
PFWGTD = LEVEL PROG WGTD
(Program Filter)

$VFFLAT = \overline{LEVEL} \cdot \overline{PROG} \cdot \overline{WGTD}$
(3 kHz Filter)

H. Dial and Hold Functions

3.21 Variations of the Dial and Hold function have been incorporated in the 701A units manufactured to date. The functional differences and effective serial numbers are described in the following paragraphs.

3.22 701A Units, S/N up thru 1502: Units with serial numbers up thru 1502 have the dial and hold function associated with the TRANSMIT (output) jack. (See Figure 13.) When a dial set is plugged into the DIAL jack, both the receive and transmit internal measurement circuits are disconnected from the TRANSMIT jack, and a direct connection is established between the DIAL jack and the TRANSMIT jack. This arrangement permits the circuit under test to be connected to the TRANSMIT jack, and to be dialed up using a dial set plugged into the DIAL jack. When an off-hook condition is established at the far-end, and with the HOLD/OFF switch in the HOLD position, a holding current is applied to the line under test. Removal of the dial set from the DIAL jack establishes a connection from the TRANSMIT jack to the internal measurement circuitry which is controlled by the XFR/NORM switch. With the switch in the XFR position, the measurement circuitry is connected to the circuit under test and the transmit circuitry is disconnected. In the NORM position, the transmit measurement circuitry is connected to the circuit under test to allow application of the oscillator output. The units having this particular arrangement can be identified by the presence of the XFR/NORM toggle switch on the front panel.

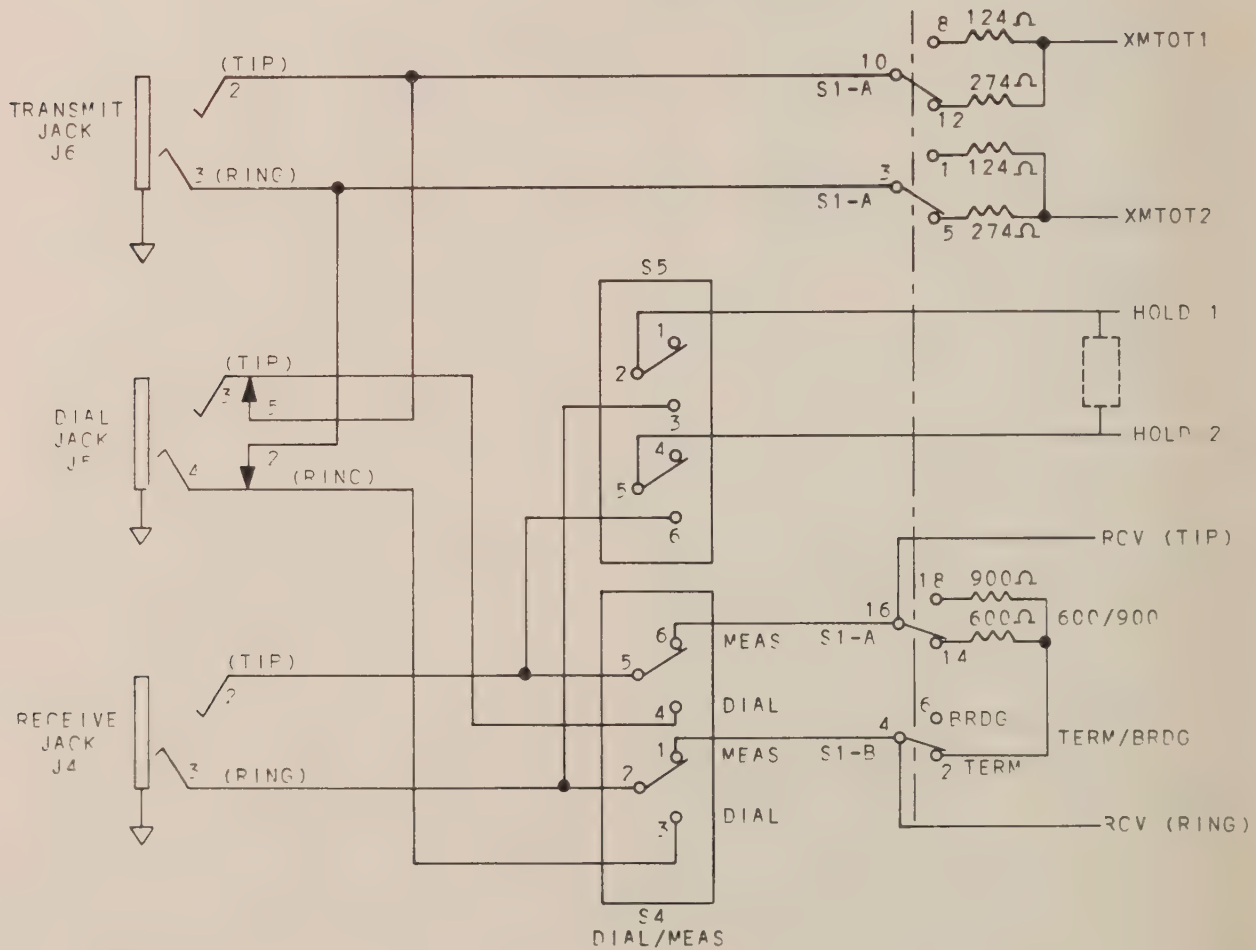


S1 Shown in OUT position
S2 Shown in NORM position
S3 Shown in OFF position

Fig. 13

3.23 701A Units, S/N 1656 Including all subsequent serial numbers except 1662 thru 1668: The current production units incorporate a DIAL/MEAS switch (in lieu of the XFR/NORMAL switch), and have the dial/hold function assigned to the RECEIVE jack. (See Figure 14.) With the circuit under test patched to the RECEIVE jack and a dial set plugged into the DIAL jack, the circuit under test can be dialed up when the DIAL/MEAS switch is placed in the DIAL position. Upon establishing an off-hook condition at the far-end, and placing the DIAL/MEAS switch in the MEAS position, the internal receive measurement circuitry is connected to the circuit under test. If only a measurement test is required, it is not necessary to remove the dial set from the DIAL jack.

3.24 Most circuits will be held up by the 600 or 900 ohm resistive termination across Tip and Ring. However, for extended loops, additional holding current can be provided by placing the HOLD/OFF switch in the HOLD position. If it is desired to apply a test tone signal, the HOLD/OFF switch must be



S1 Shown in OUT position

S4 Shown in MEAS position

S5 Shown in OFF position

Fig. 14

placed in the HOLD position, the dial set must be removed from the DIAL jack (if one is connected), and the DIAL/MEAS switch must be returned to the DIAL position. With a dial set removed, the DIAL/MEAS switch functions as a transmit measure switch connecting the circuit under test to the transmit circuit or the measurement circuitry respectively.

3.25 701A Units, S/N 1503 thru 1655 and 1662 thru 1668: A relatively small number of units were manufactured similar to the current version (refer to Paragraph 3.23 and 3.24), but without the capability to connect the transmit output to the dialed up circuit. The front panel arrangement of these units is the same as the current production version.

3.26 702A DIAL and HOLD Function (Figure 13): The 702A units have the same dial and hold configuration as the early 701A models (paragraph 3.22).

4. TEST AND CALIBRATION

A. 701A and 702A Test and Calibration Procedures

4.01 The following procedure is applicable to both the 701A and 702A test sets.

4.02 Test Equipment Required: The following test equipment is required for calibrating the 701A and 702A test sets.

- Multimeter
- RMS Voltmeter
- Distortion Analyzer
- Frequency Counter
- Oscillator
- Oscilloscope
- Attenuator
- Dc Power Supply

4.03 Initial Set-Up Procedure: Set the front panel switches on the 701A or 702A as follows:

FUNCTION switch	LEVEL
DISPLAYS switch	RCV
All pushbutton switches	Out (disengaged)

4.04 Jack Connections Test: Check the front panel jacks as follows:

(a) Check and verify that the Tip and Ring of the RECEIVE, TRANSMIT, and DIAL jacks are not connected to ground.

(b) Check and verify that the sleeves of all three jacks are connected to analog ground.

(c) Turn on power to the unit being tested.

4.05 Level Calibration Test: Perform the level calibration test as follows:

(a) Input a 0.0 dBm signal at 1 kHz and verify that it reads 0.0 dBm on an RMS meter (600 ohms termination).

(b) Adjust R10 (8000-1100-00) for a reading of +/-0.0 on the level display.

(c) Put 20 dB attenuation in the input signal.

(d) Adjust R1 (8000-1102-00) for a reading of -20.0 dBm on the level display.

(e) Put 40 dB attenuation in the input signal.

(f) Adjust R8 (8000-1100-00) for a reading of -40.0 dBm on the level display.

(g) Repeat step (a) until the following conditions are met.

RMS Meter	Level Display
+13.0 dBm	+13.0 +/-0.2 dBm
0.0 dBm	0.0 +/-0.1 dBm
-10.0 dBm	-10.0 +/-0.2 dBm
-20.0 dBm	-20.0 +/-0.2 dBm
-30.0 dBm	-30.0 +/-0.2 dBm
-40.0 dBm	-40.0 +/-0.2 dBm
-50.0 dBm	-50.0 +/-0.2 dBm

4.06 Noise Calibration Test: Perform the noise calibration test as follows:

(a) Set FUNCTION switch to NOISE position.

(b) Input a 0.0 dBm, 1000 Hz signal.

(c) Adjust R9 (8000-1100-00) for a reading of 90 dBrn on the level display.

(d) Put 40 dB attenuation in the input signal.

(e) Adjust R7 (8000-1100-00) for a reading of 50 dBrn on the level display.

(f) Repeat step (b) until the following conditions are met.

RMS Meter	Level Display
0.0 dBm	90 +/-1 dBrn
-10.0 dBm	80 +/-1 dBrn
-20.0 dBm	70 +/-1 dBrn
-30.0 dBm	60 +/-1 dBrn
-40.0 dBm	50 +/-1 dBrn
-50.0 dBm	40 +/-1 dBrn

4.07 Transmitter Level Calibration Test: Perform the transmitter level calibration test as follows:

(a) Set DISPLAYS switch to TRMT position and select 1004-Hz mode.

4.08 Transmitter Frequency Calibration Test: Perform the transmitter frequency calibration test as follows:

(a) Set DISPLAYS switch to TRMT mode and select OSC mode at 0.0 dB, 300 Hz.

(b) Adjust R5, R6, R7 (8000-1102-00) for distortion of -50 dB.

(c) Change transmitter frequency to 50 Hz.

(d) Adjust R4 (8000-1102-00) for distortion of -40 dB.

(e) Change transmitter frequency to 3000 Hz.

(f) Adjust R7 (8000-1102-00) for distortion of -48 dB.

(g) Repeat steps (a) thru (f) until the distortion specifications are satisfied.

4.09 1004 Hz Test: Perform the 1004 Hz test as follows:

(a) Set DISPLAYS switch to TRMT position, and select 1004 Hz mode.

(b) Adjust R8 (8000-1102-00) for a frequency display of 1005 Hz.

B. ED-1101-00 (Digital Level PCB) Test Procedure

4.10 The following test procedure is applicable to both the 701A and 702A test sets:

4.11 Test Equipment Required: The following test equipment is required for performing this test procedure:

701A or 702A (calibrated)
Frequency Counter
Halcyon 520B
Attenuator

4.12 Initial Set-Up Procedure: Set the front panel switches on the 701A

FUNCTION switch	LEVEL
DISPLAYS switch	RCV
All pushbutton switches	Out (disengaged)

4.13 Displays Test: Perform the displays test as follows:

(a) Input a 1000 Hz signal at 0.0 +/- 0.1 dBm into the RECEIVE jack.

(b) The level display should read 0.0 dBm +/- 0.1 dBm and the frequency display should read 1.000 kHz.

(c) Observe that the frequency display does not change more than 1 Hz in least significant digit at a rate not less than one minute.

(d) The level display should not change or flicker.

(e) Both displays should be of equal brightness and readable.

4.14 Autoranging Test: Perform the autoranging test as follows:

(a) Change input level to -20.0 +/-0.1 dBm.

(b) The level display should change to -20.0 +/-0.1 dBm within 2 seconds and stay at that point.

(c) Change input level to -40.0 +/-0.1 dBm.

(d) The level display should change to -40.0 +/-0.2 dBm within 2 seconds and stay at that point.

4.15 Noise Test: Perform the noise test as follows:

(a) Set FUNCTION switch to NOISE position.

(b) Input the following signals and observe the level display.

Input Signal	Level Display Reading
0.0 +/-0.1 dBm	90 +/-1 dBrn
-20.0 +/-0.1 dBm	70 +/-1 dBrn
-40.0 +/-0.1 dBm	50 +/-1 dBrn
-60.0 +/-0.1 dBm	30 +/-1 dBrn

4.16 Frequency Resolution Test: Resolution should be 1 Hz for the 4 kHz range and 10 Hz for the 20 kHz range.

4.17 Blanking Logic Test: Perform the blanking logic test as follows:

(a) Set DISPLAYS switch to TRMT position.

(b) Set FUNCTION switch to NOISE position.

(c) Observe that the level display is blanked.

(d) Set the 1004/QUIET/OSC switch to QUIET position.

(e) Observe that both displays blank out except for the +/- sign and the decimal point.

(f) Input a signal 13.5 +/-0.4 dBm. The level display should be blanked except for the +/- sign and the decimal point.

(g) Except for the above conditions or low battery, the displays should not blank out in any other modes.

(h) Turn off power to the unit under test.

(i) This completes the test procedure for the Digital Level PCB (ED-1101-00).

5. ENGINEERING DRAWINGS

5.01 This section contains the Halcyon engineering drawings required for maintenance of the 701A and 702A test sets. The block and final assembly draawings are included first to aid in identifying the subassembly drawings that follow. The subassembly drawings are in numerical order as indicated by the four-digit base number and the two-digit suffix. All the drawings required for each assembly or subassembly are grouped together, with the schematic diagram followed by the assembly drawing, bills of material, and wiring list as applicable. The drawings included are as follows:

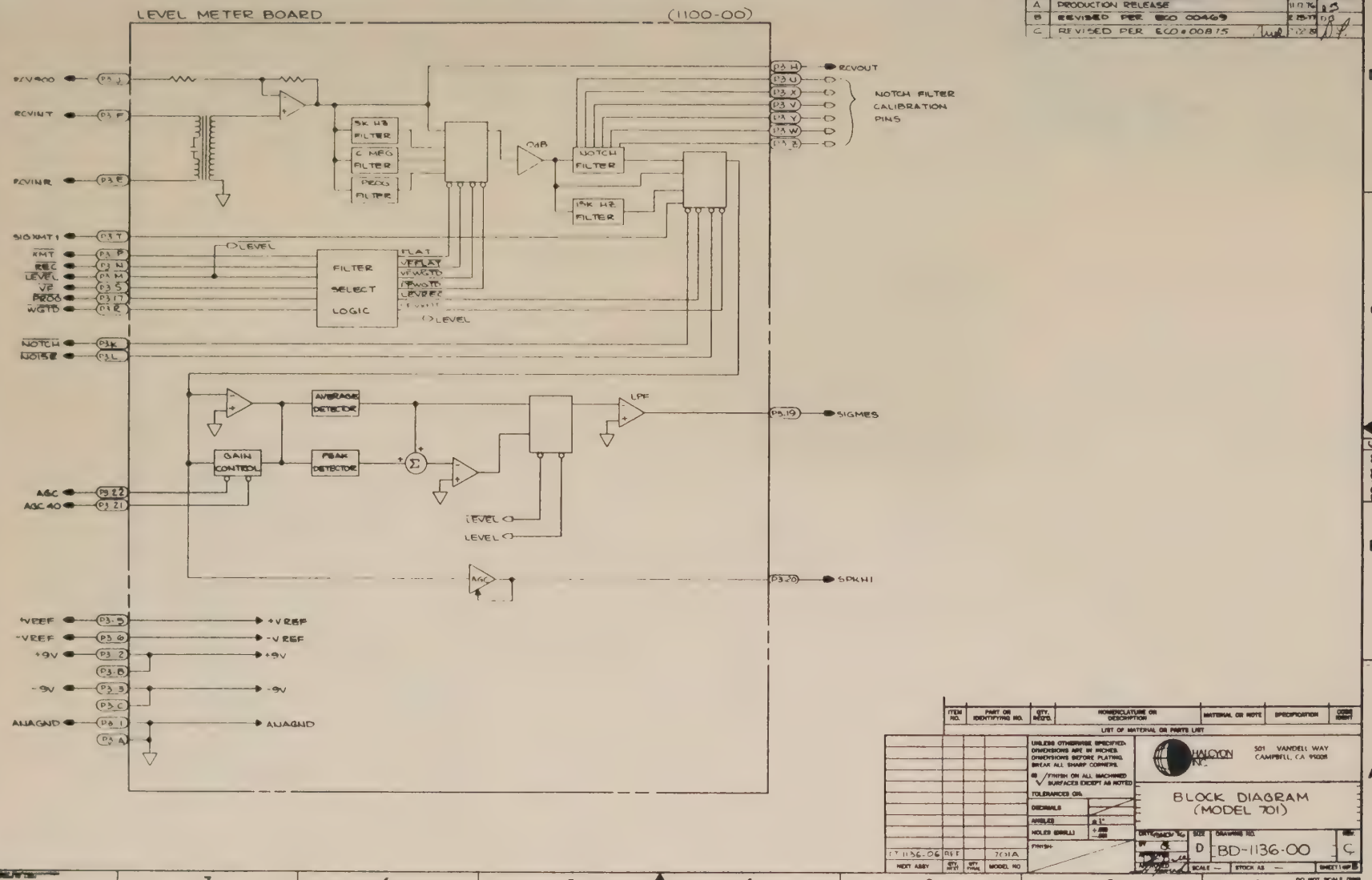
Top Assembly Drawings

1136-00 701A Transmission Test Set
1143-00 702A Transmission Test Set

Sub-Assembly Drawings

0001-45 Enclosure, 701A
0002-45 Frequency Display, 702A
0002-46 Level Display, 702A
1057-00 DC/DC Converter, 702A
1057-15 DC/DC Conv Mod, 702A
1100-00 Level Meter*
1101-00 Digital Level*
1102-00 Common Analog, 701A
1102-01 Common Analog, 702A
1103-01 Mother Board, 701A
1104-00 Power Supply, 701A
1122-24 Front Panel, 701A
1122-25 Rear Panel, 701A
1143-01 Front Panel, 702A
1143-02 Inst Rack, 702A
1148-00 Mother Board, 702A
2084-01 Termination Board*

*Common to both 701A and 702A units



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11-17-76	
B	REVISED PER ECO 00469	2-15-77	
C	REVISED PER ECO 00815	7-12-78	

ITEM NO.	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. ✓ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS, ANGLES ±1°, HOLES (DRILL) +.005 -.000, FINISH

HALCYON INC. 501 VANDELL WAY CAMPBELL, CA 95008

BLOCK DIAGRAM (MODEL 701)

DRAWN BY [illegible] 11-17-76 | SIZE D | DRAWING NO. BD-1136-00 | REV. C

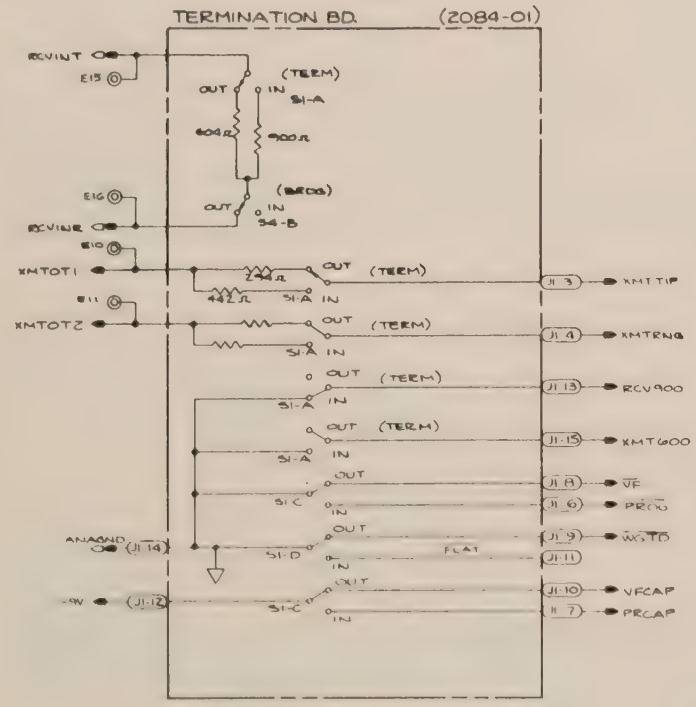
SCALE — | STOCK AS — | SHEET 1 OF 1

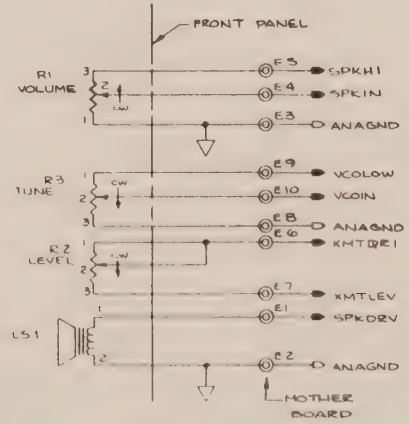
DO NOT SCALE DRAWING

NEXT ASSY | QTY. PER | QTY. PANEL | MODEL NO. 701A | BT 1136-06 REF

REVISIONS

SEE SHEET 1





ITEM NO.	PART OR IDENTIFYING NO.	QTY REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR RSPC	SPECIFICATION

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.

63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:

DECIMALS

ANGLES ±1°

HOLES (DRILL) ±.1

FINISH

NEXT ASSY | USED ON | MODEL NO.

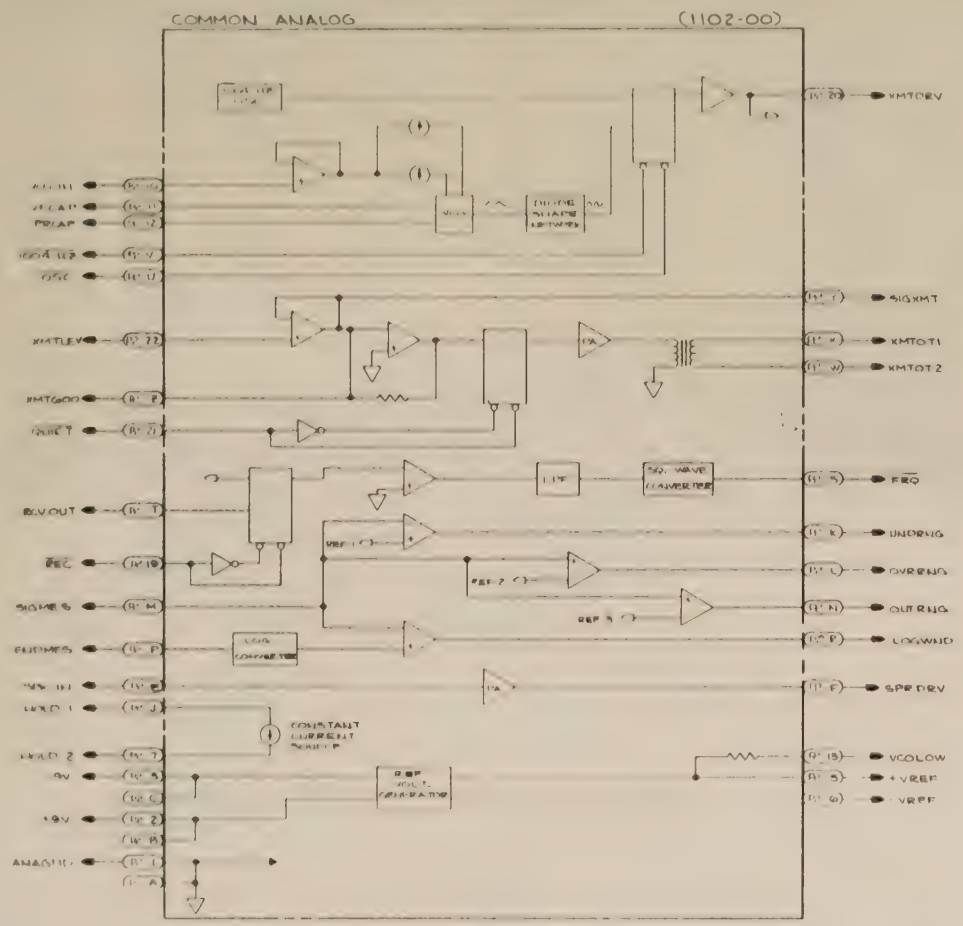
HALCYON INC.
901 VANDELL WAY
CAMPBELL, CA 95008

BLOCK DIAGRAM (MODEL 701)

SIZE D | DRAWING NO. BD-1136-00 | REV C

SCALE — | SHEET NO. — | DRAWN

DO NOT SCALE DRAWING



SEE SHEET 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

ITEM NO	PART OR IDENTIFYING NO.	QTY. REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.

√ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:

DECIMALS

ANGLES ±1°

HOLES (SMALL) ±.000 .005

FINISH

NEXT ASSY | QTY. REQ'D | QTY. PER | MODEL NO.

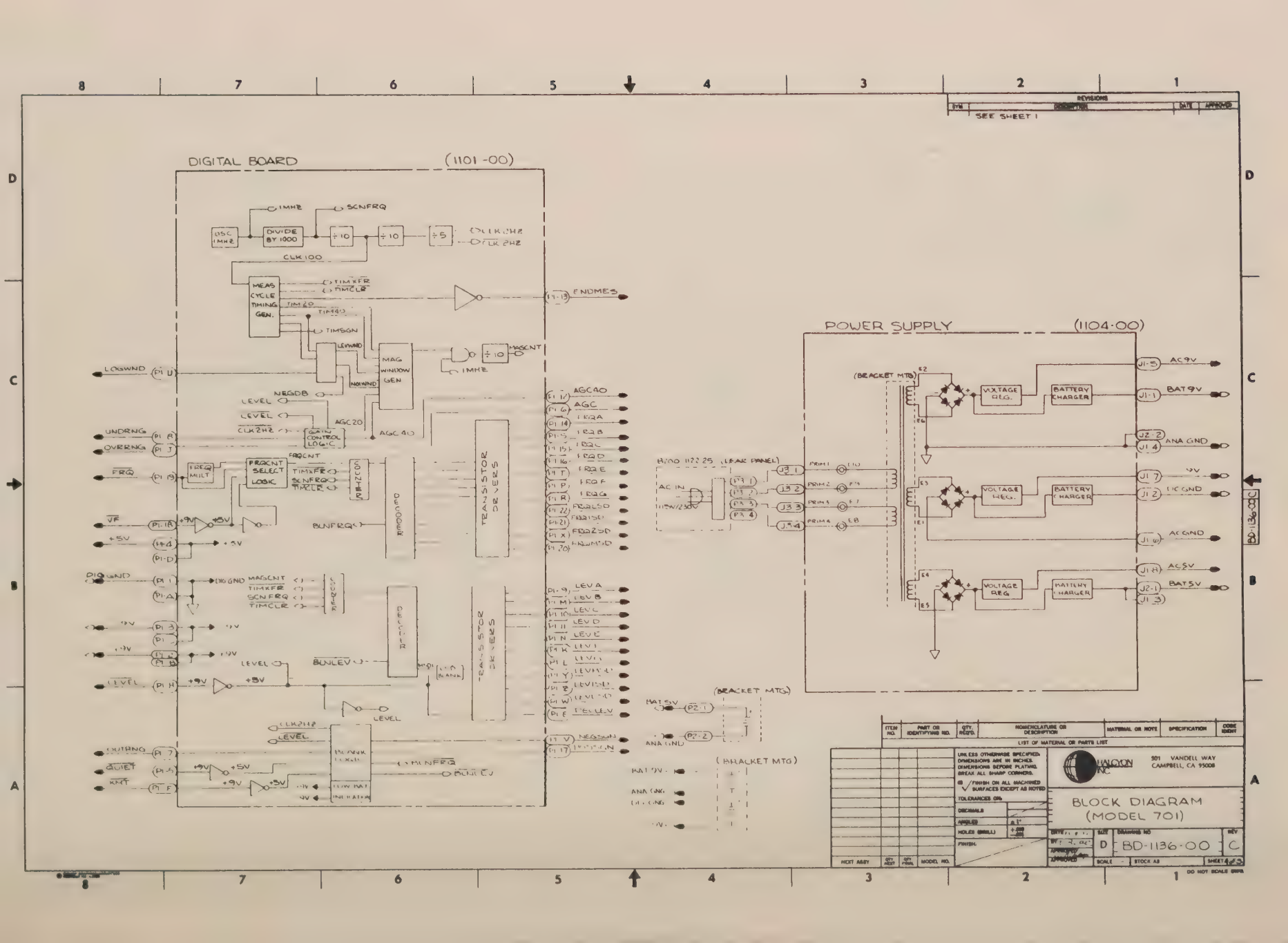
HALCYON
501 VANDELL WAY
CAMPBELL, CA 95008

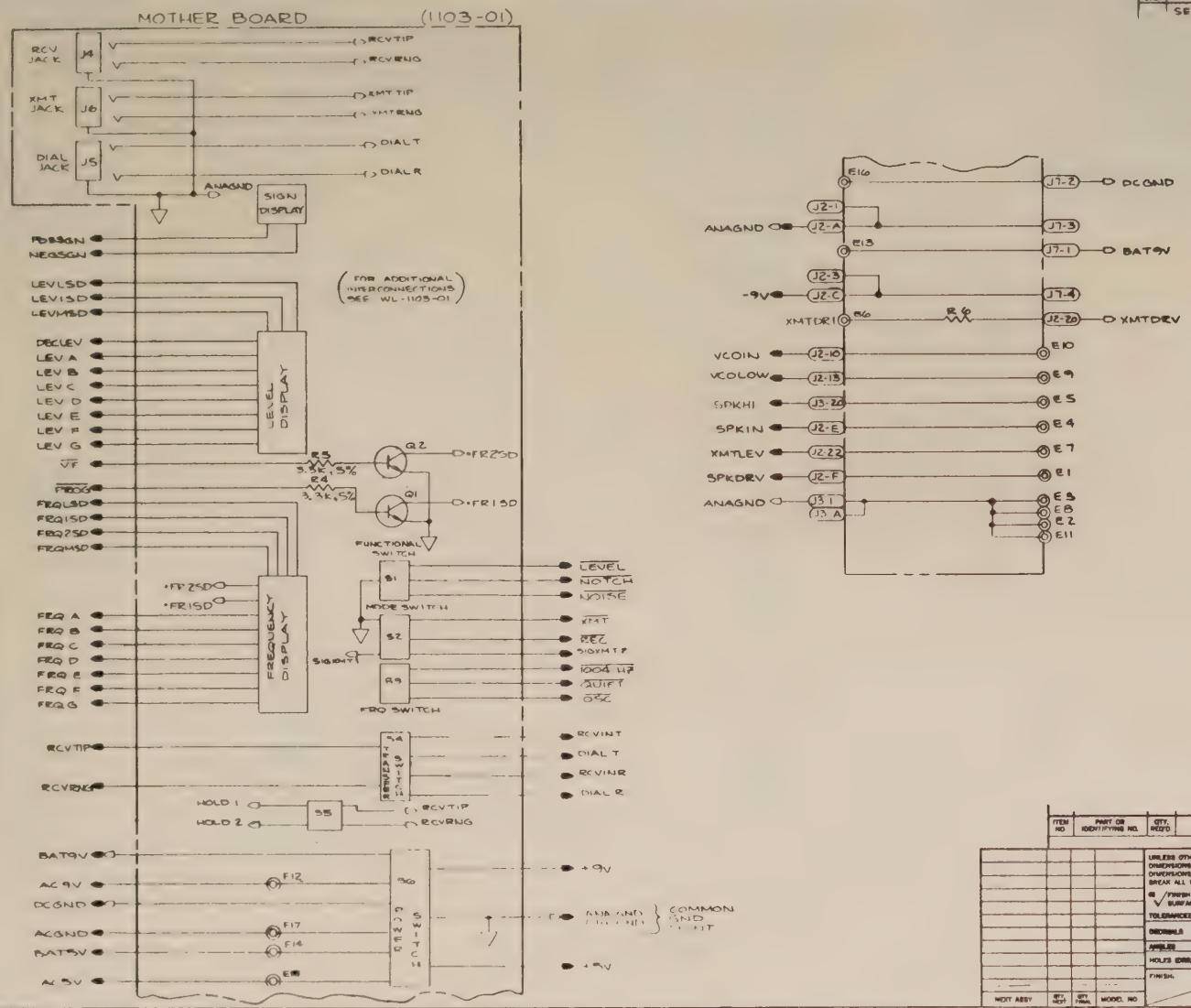
BLOCK DIAGRAM
(MODEL 701)

SIZE D | DRAWING NO. BD-1136-00 | REV C

DRAWN | CHECKED | APPROVED | SCALE - | STOCK AS - | SHEET 1 of 1

DO NOT SCALE PRINT


DIGITAL BOARD (1101-00)
POWER SUPPLY (1104-00)
SEE SHEET 1
REVISIONS
BLOCK DIAGRAM (MODEL 701)
BD-1136-00
HALCYON INC
501 VANDELL WAY CAMPBELL, CA 95008
LIST OF MATERIAL OR PARTS LIST
DO NOT SCALE DWG.



SEE SHEET 1

LIST OF MATERIAL OR PARTS LIST

ITEM NO	PART OR IDENTIFYING NO.	QTY. REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. ✓ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS, ANGLES, HOLES (DRILL), FINISH.

HALCYON INC. 501 VANDELI WAY CAMPBELL, CA 95008

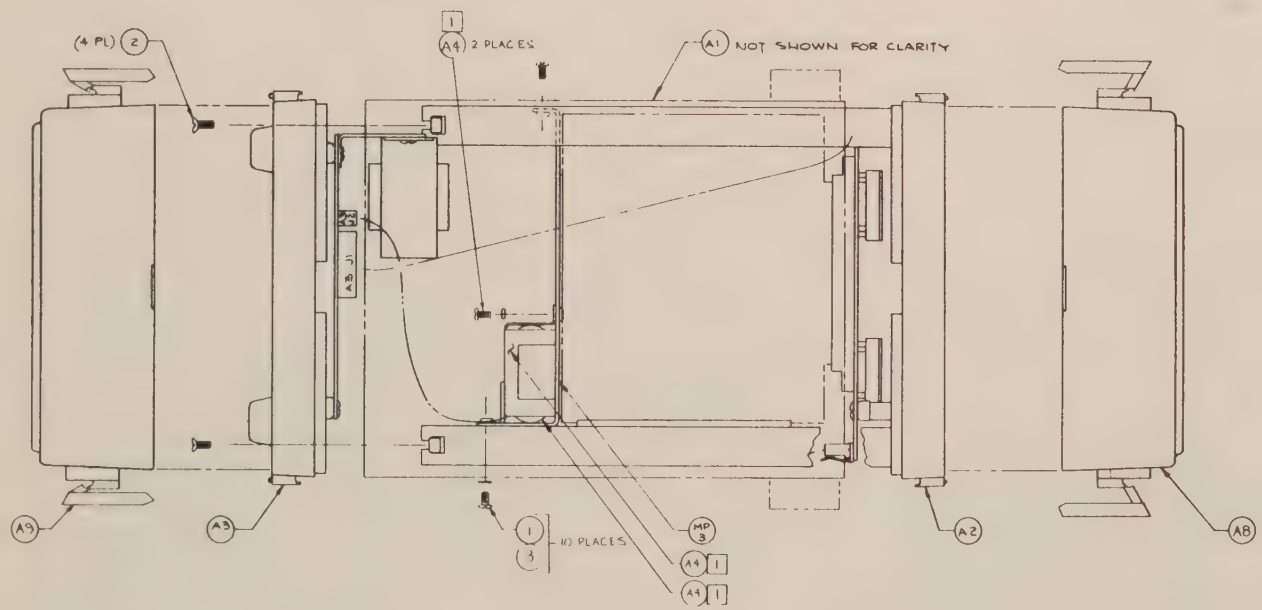
BLOCK DIAGRAM (MODEL 701)

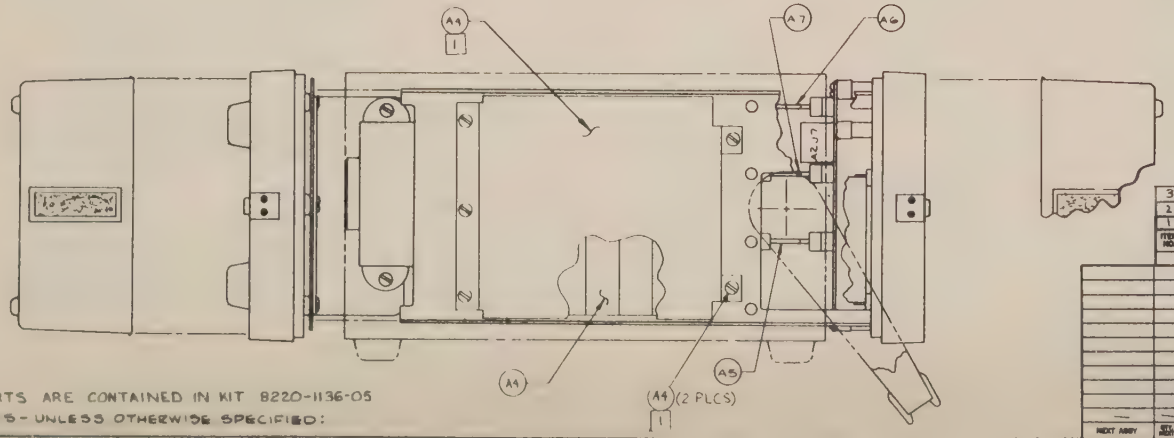
SIZE D | DRAWING NO. BD-1136-00 | REV C

SCALE — | STOCK AS — | SHEET 1 OF 1

DO NOT SCALE DRAWING

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11-12-76	DS
B	REVISED PER ECO 00488	4-8-77	DS
C	REVISED PER ECO 00508	5-11-77	DS
D	REVISED PER ECO 00583	8-9-77	MY
E	REVISED PER ECO 00610	Rel 9-20-77 / Rel 7/11/78	
F	REVISED PER ECO #00822	7/11/78	





ITEM NO.	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT.
3	2000-0078-00	10	WASHER-INT TOOTH LK #4	—	—	—
2	2000-0243-00	4	SCREW-FLAT HD 6-32 x ⅜	—	—	—
1	2800-0123-00	10	SCREW B.H. 4-40 x ¼	—	—	—

LIST OF MATERIAL OR PARTS LIST

1 PARTS ARE CONTAINED IN KIT 8220-1136-05

NOTES - UNLESS OTHERWISE SPECIFIED:

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. ✓ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS ±.010, ANGLES ±2°, RADIUS (SMALL) ±.030. FINISH: SEE NOTES

NEXT ASSY — QTY REQ'D — 101A MODEL NO.

HALCYON INC. 301 VANDELL WAY CAMPBELL, CA 95008

ASSEMBLY-TRANSMISSION TEST SET (701A)

DRAWN 12-22-76 BY — CHECKED — APPROVED — SIZE D — DRAWING NO. EJ-1136-00 — REV. F

SCALE 1 X — STOCK AS 9000 — SHEET 1 of 1

DO NOT SCALE DWG.

EJ-1136-00E

EFFECTIVITY DATE: ALL — SINGLE LEVEL MILLS OF MATERIAL

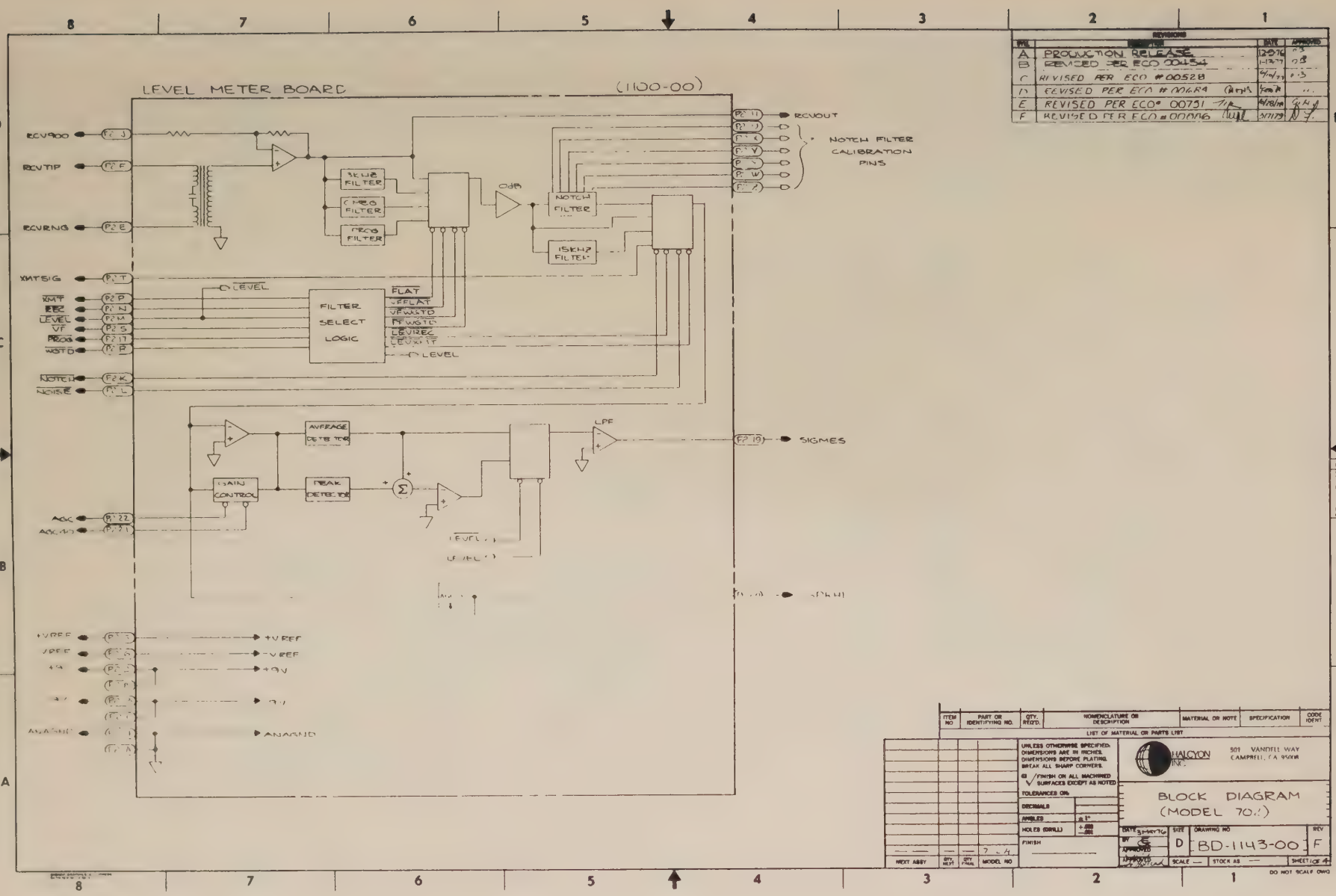
PARENT PART: 9000-1136-00 ASSY-TRANSMISSION TEST SET UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ENG: E SRCE CODE:A TYPE: 1 ARC: Y PLAN CODE: P DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	E W C	PART DESCRIPTION / REMARKS	PR CU	S C E	T Y P	S P R	A P C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	2500-0001-49		PANEL-INNER REAR MP3		P	1			P	EA	1.00					
020	8000-1100-00	F	PCB ASSY LEVEL METER HR A5		A	1		Y	P	EA	1.00					
025	8000-1101-00	E	PCB ASSY-DIGITAL LEVEL A6		A	1		Y	P	EA	1.00					
030	8000-1102-00	H	PCB ASSY COMMON ANALOG A7		A	1		Y	P	EA	1.00					
035	8200-1122-25	B	ASSY-BACK PANEL MOD 701 A8		A	1		X	P	EA	1.00					
037	8100-0004-92	A	ASSY, COVER & LATCH-REAR A9		A	1		*	P	EA	1.00		29-JAN-79			
038	8100-0004-93	A	ASSY, COVER & LATCH-FRONT AA		A	1		*	P	EA	1.00		29-JAN-79			
040	8210-1122-24	D	ASSY-FRONT PANEL MOD 701 A2		A	1		X	P	EA	1.00					
045	8220-1136-05	A	ASSY-BATTERY KIT OPTION A4		A	1		X	P	EA	1.00					
050	8500-0001-45	D	ASSY-ENCLOSURE 701A A1		A	1		X	P	EA	1.00					

WIRING LIST WL 1136 – 00 REV A

DATE _____ ECO Nº _____ SHEET 1 OF 1

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
			A2	J1	A3	J1	
			B1	J1	A2	J7	
			B2	J1	A3	J2	



REVISIONS			
A	PRODUCTION RELEASE	12-9-76	CB
B	REVISED PER ECO 00454	1-12-77	CB
C	REVISED PER ECO #00528	5/4/77	CB
D	REVISED PER ECO #00689	6/28/78	
E	REVISED PER ECO# 00731	9/28/78	
F	REVISED PER ECO #00006	3/7/79	

ITEM NO	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. 63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS, ANGLES ± 1°, HOLES (DRILL) +.000 -.005, FINISH

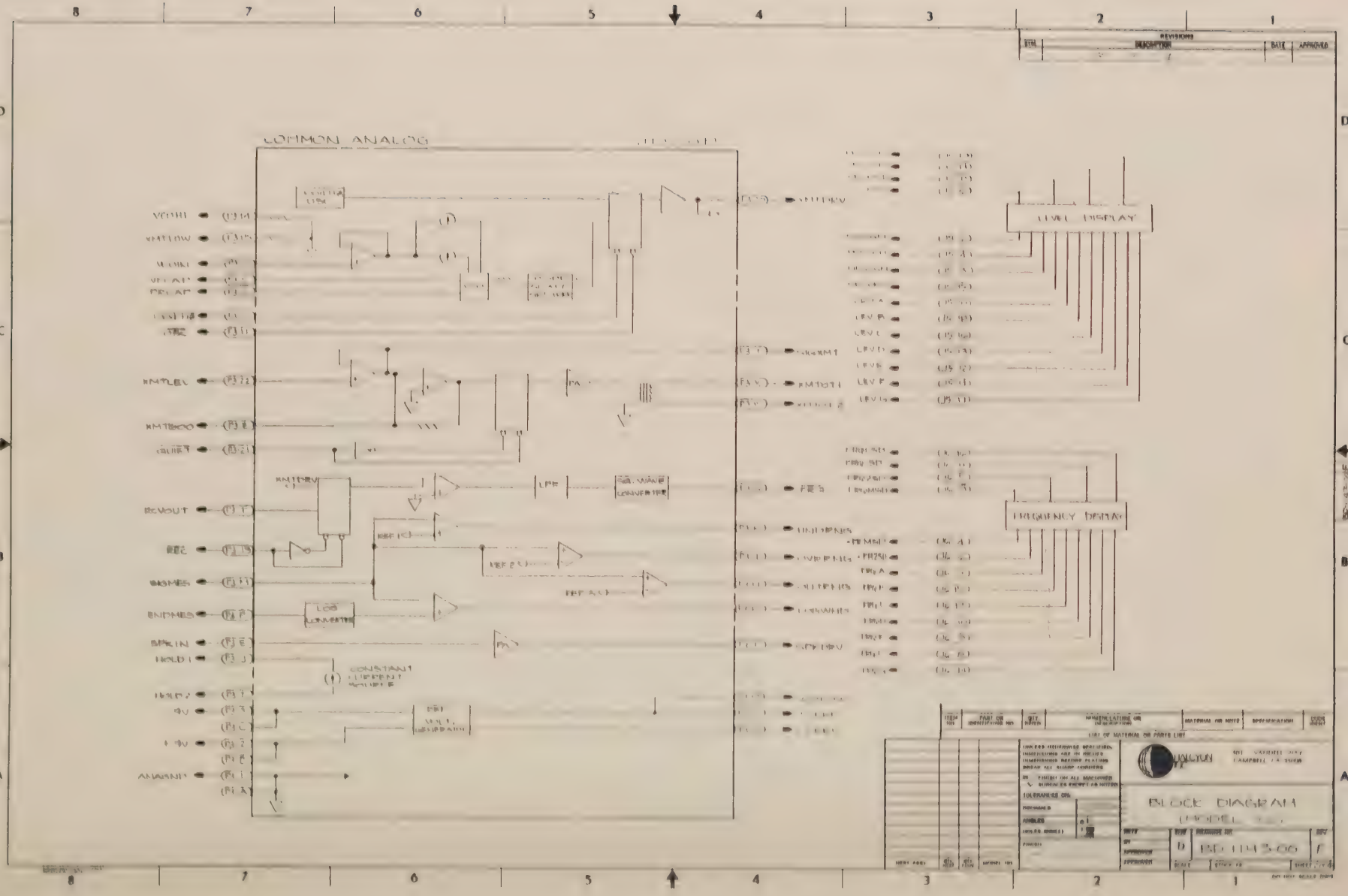
HALCYON INC. 501 VANDELL WAY CAMPBELL, CA 95008

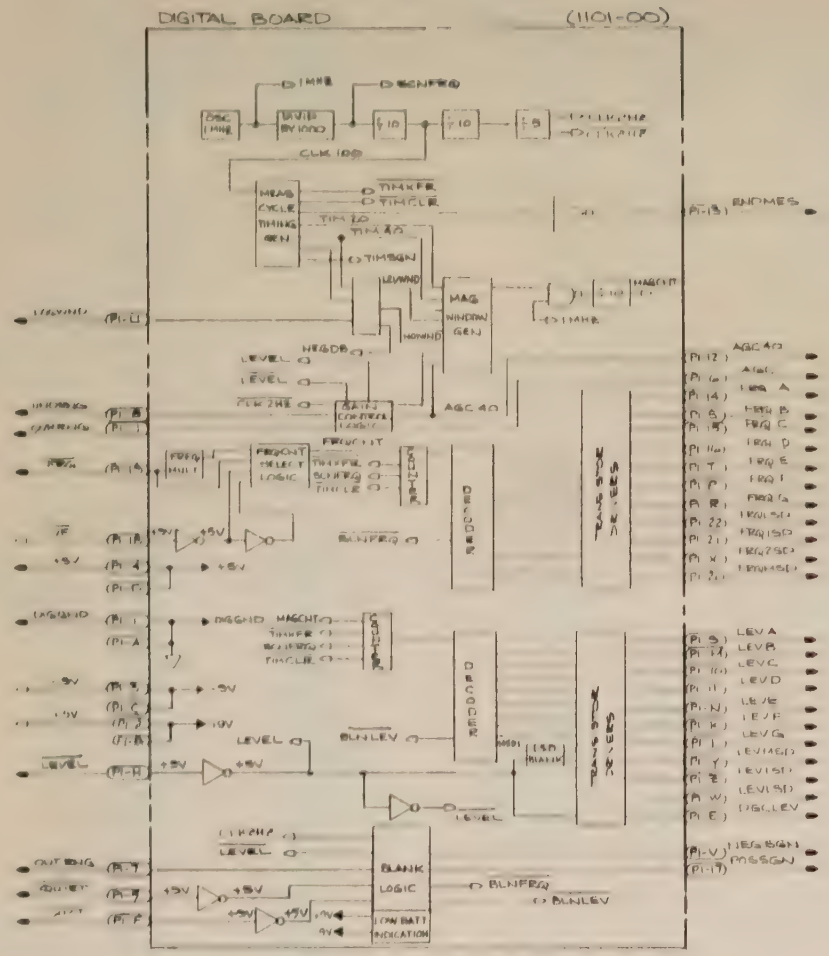
BLOCK DIAGRAM (MODEL 70.1)

DATE	SIZE	DRAWING NO	REV
3-MAY-76	D	BD-1143-00	F

NEXT ASSY | QTY. REQ'D | QTY. FINAL | MODEL NO | SCALE — | STOCK AS — | SHEET 1 OF 4

DO NOT SCALE DWG


COMMON ANALOG
LEVEL DISPLAY
FREQUENCY DISPLAY
CONSTANT CURRENT SOURCE
LOG CONVERTER
LPF
SQ. WAVE CONVERTER
REVISIONS
BLOCK DIAGRAM
PC 1113-06



ITEM NO	PART OR IDENTIFYING NO.	QTY REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CAGE CODE

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DIMENSIONING BEFORE PLATING. BREAK ALL SHARP CORNERS.

32 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:

DECIMALS

ANGLES ±1°

HOLES (DRILL) ±.005

FINISH

NEXT ASSY | USED ON | MODEL NO.

WILTRON 801 VANCHELL WAY CAMPBELL CA 95008

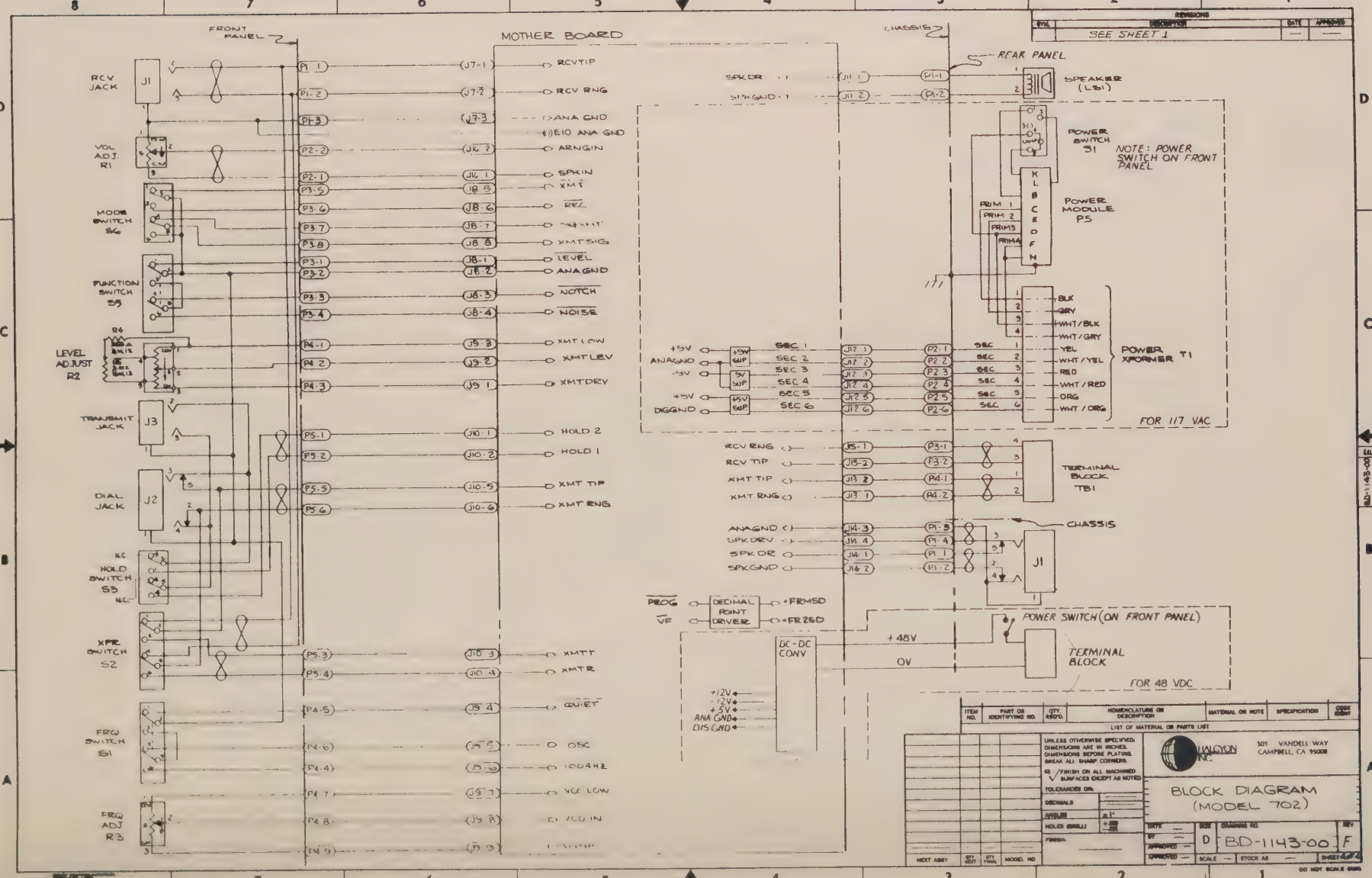
BLOCK DIAGRAM (MODEL 702)

DATE | BY | APPROVED | APPROVED

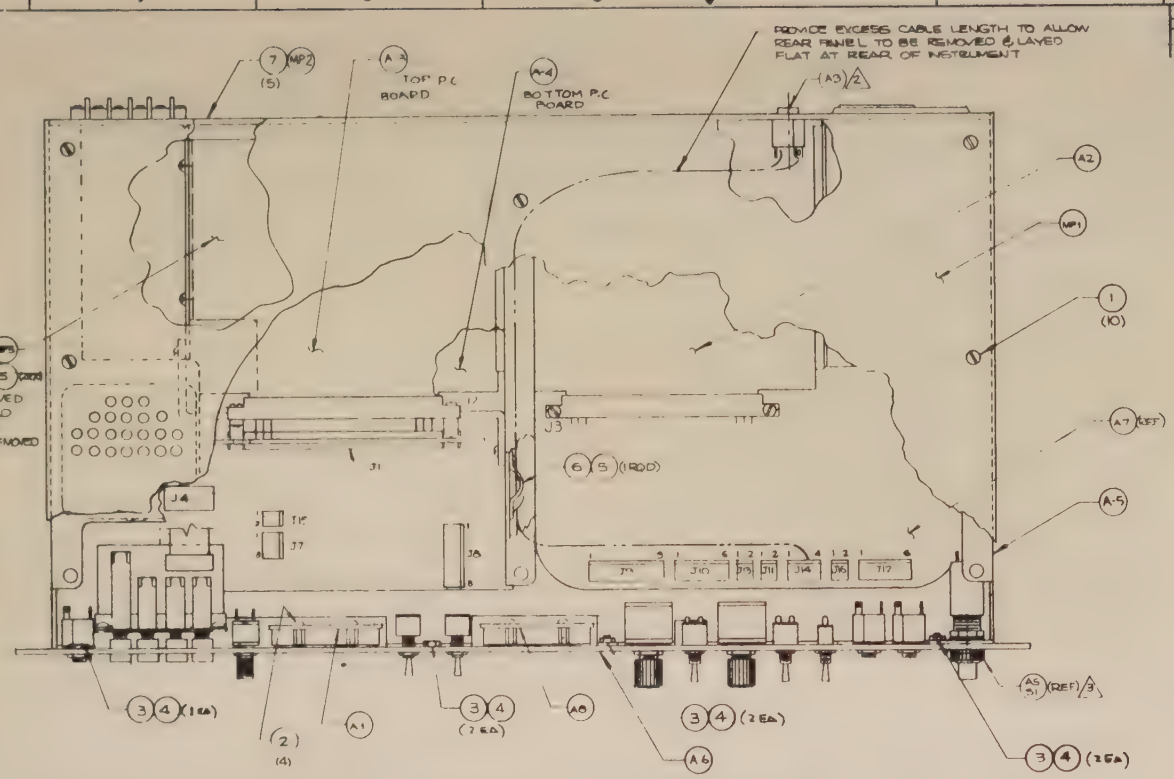
SIZE D | DRAWING NO. BD-1143-00 | REV F

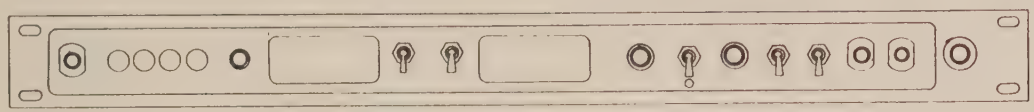
SCALE | STOCK NO | SHEET 2 of 2

DO NOT SCALE DRAWING


FRONT PANEL
MOTHER BOARD
CHASSIS
REAR PANEL
RCV JACK
J1
VOL. ADJ. R1
MODE SWITCH S6
FUNCTION SWITCH S9
LEVEL ADJUST R2
R4
TRANSMIT JACK
J3
DIAL JACK
J2
HOLD SWITCH S5
XFR SWITCH S2
FREQ SWITCH S1
FREQ ADJ R3
P1-1
P1-2
P2-2
P2-1
P3-5
P3-6
P3-7
P3-8
P3-1
P3-2
P3-3
P3-4
P4-1
P4-2
P4-3
P5-1
P5-2
P5-5
P5-6
P5-3
P5-4
P4-5
P4-6
P4-4
P4-7
P4-8
P4-9
J7-1
J7-2
J7-3
J16-2
J14-1
J18-5
J18-6
J18-7
J18-8
J18-1
J18-2
J18-3
J18-4
J9-3
J9-2
J9-1
J10-1
J10-2
J10-5
J10-6
J10-3
J10-4
J9-4
J9-5
J9-6
J9-7
J9-8
J9-9
RCVTIP
RCV RNG
ANA GND
E10 ANA GND
ARNGIN
SPKIN
XMT
REC
XMTSIG
LEVEL
ANAGND
NOTCH
NOISE
XMT LOW
XMT LEV
XMTDRV
HOLD 2
HOLD 1
XMT TIP
XMT RNG
XMTT
XMTR
QUIET
OSC
100KHZ
VCC LOW
VCO IN
SPKDR
SPKGND
J11-1
J11-2
SPEAKER (LS1)
POWER SWITCH S1
NOTE: POWER SWITCH ON FRONT PANEL
POWER MODULE P5
PRIM 1
PRIM 2
PRIM3
PRIM4
BLK
GRY
WHT/BLK
WHT/GRY
YEL
WHT/YEL
RED
WHT/RED
ORG
WHT/ORG
POWER XFORMER T1
FOR 117 VAC
+5V
ANAGND
-5V
+5V
DIGGND
+5V SUP
-5V SUP
+5V SUP
SEC 1
SEC 2
SEC 3
SEC 4
SEC 5
SEC 6
J17-1
J17-2
J17-3
J17-4
J17-5
J17-6
P2-1
P2-2
P2-3
P2-4
P2-5
P2-6
RCV RNG
RCV TIP
XMT TIP
XMT RNG
J15-2
J13-2
J13-1
P3-1
P3-2
P4-1
P4-2
TERMINAL BLOCK TB1
ANAGND
SPK DRV
SPK DR
SPK GND
J14-3
J14-4
J14-1
J14-2
P1-3
P1-4
P1-1
P1-2
CHASSIS
J1
PROG
VF
DECIMAL POINT DRIVER
FRMSD
FR25D
DC-DC CONV
+12V
-12V
+5V
ANA GND
DIS GND
+48V
0V
POWER SWITCH (ON FRONT PANEL)
TERMINAL BLOCK
FOR 48 VDC
REVISIONS
SEE SHEET 1
ITEM NO.
PART OR IDENTIFYING NO.
QTY. REQ'D.
NOMENCLATURE OR DESCRIPTION
MATERIAL OR NOTE
SPECIFICATION
LIST OF MATERIAL OR PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.
FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON:
DECIMALS
ANGLES
HOLES (DRILL)
FINISH
NEXT ASSY
QTY. REQ'D
QTY. PROD.
MODEL NO.
HALCYON INC.
501 VANDELL WAY
CAMPBELL, CA 95008
BLOCK DIAGRAM
(MODEL 702)
DRAWN
BY
APPROVED
APPROVED
SIZE
D
DRAWING NO.
BD-1143-00
REV
F
SCALE
STOCK AS
SHEET 1 OF 1
DO NOT SCALE DRWG.
BD-1143-00F

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	2/6/76	
B	REVISED PER ECO 00505	7-1-77	


REMOVE EXCESS CABLE LENGTH TO ALLOW REAR PANEL TO BE REMOVED & LAYED FLAT AT REAR OF INSTRUMENT
TOP P.C. BOARD
BOTTOM P.C. BOARD
TOP P.C. BOARD REMOVED FOR CLARITY- SHIELD MUST BE INSTALLED W/TOP P.C. BOARD REMOVED
(5)
(10)
(2)
(4)
(2 EA)
(2 EA)
(2 EA)
(REF)



⚠ MOUNTING HARDWARE SUPPLIED WITH PART

⚠ INSTALL #10 WASHER PROVIDED BETWEEN JACK & PANEL

1. FOR WIRING CONNECTIONS SEE WL-1143-00

UNLESS OTHERWISE SPECIFIED

ITEM NO.	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR GRADE	SPECIFICATION
			LIST OF MATERIAL OR PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. ✓ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS ANGLES HOLES (DRILL)

FINISH: SEE NOTES

NEXT ASSY. | USED ON | MODEL NO.: 702A

WILTRON INC. 991 VANDELI WAY CAMPBELL, CA 95008

ASSEMBLY- TRANSMISSION LINE MONITOR (702)

SIZE: D | DRAWING NO.: J-1143-00 | REV: B

SCALE: 1 X | STOCK NO. 90085 | SHEET

DO NOT SCALE DWG.

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 9000-1143-00 PRODUCT-XMISSION LINE MON 702A UM: EA ERC: B PROD CODE: SRCE CODE: A ECN: DATE: 00-XXX-00 ASSEMBLY QTY: 1

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S C E	T Y P	S T R	A P C	P B L N	EXTENDED QTY PER	UM	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	2500-0002-21	SHEILD-PC BOARD MODEL 702A MP3			P	1			P	1.00	EA					
010	2500-1143-05	PANEL-BACK COVER MOD 702 MP2			P	1			P	1.00	EA					
015	2500-1143-06	COVER-INSTRUMENT MOD 702 MP1			P	1			P	1.00	EA					
020	6010-0002-31	CABLE ASSY SPEAKER JACK A9	A		A	1		X	P	1.00	EA					
025	8000-0002-45	PCB ASSY-FREQ DISPLAY A8	A		A	1		Y	P	1.00	EA					
030	8000-0002-46	PCB ASSY-LEVEL DISPLAY A1	A		A	1		Y	P	1.00	EA					
035	8000-1100-00	PCB ASSY LEVEL METER BR A4	E		A	1		Y	P	1.00	EA					
040	8000-1101-00	PCB ASSY-DIGITAL LEVEL A3	C		A	1		Y	P	1.00	EA					
045	8000-1102-01	COMMON ANALOG A2	F		A	1		Y	P	1.00	EA					
050	8210-1143-01	ASSY-FRONT PANEL MOD 702 A6	C		A	1		X	P	1.00	EA					
055	8500-1143-02	ASSY-INSTRUMENT RACK MOD 702 A5	C		A	1		X	P	1.00	EA					

WIRING LIST WL- 1143 - 00 REV A PAGE 1 OF 1

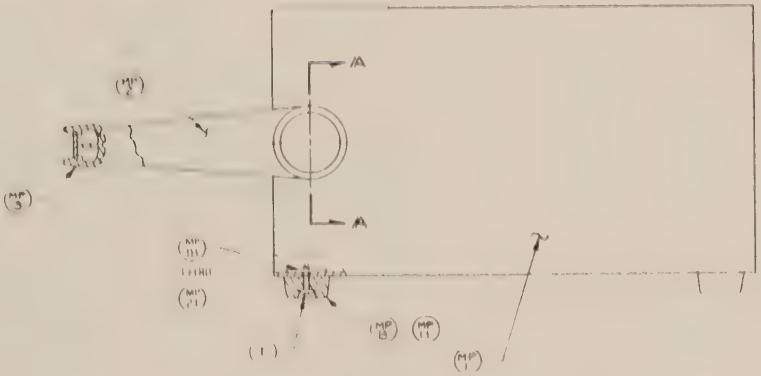
ECO NO.

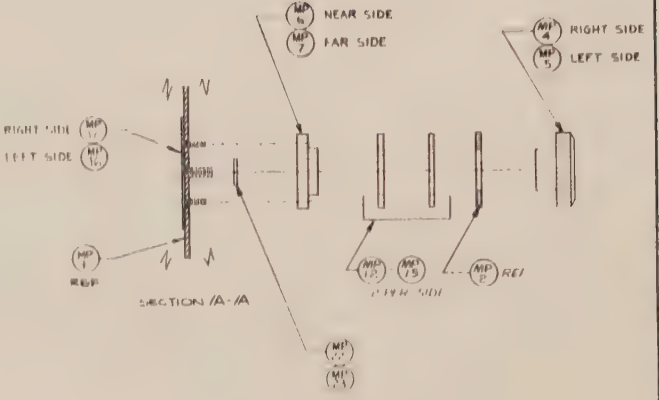
ASSY - TRANSMISSION LINE MONITOR (702)

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
Front Panel Assy	P1	-	J7	-	
	P2	-	J16	-	
	P3	-	J8	-	
	P4	-	J9	-	
	P5	-	J10	-	
Rack Assy	P1	-	J11	-	
	P2	-	J12	-	
	P3	-	J15	-	
	P4	-	J13	-	
Rear Panel Assy	P1	-	J14	-	

H06-1004-A

REVISIONS			
P/N	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	10-12-06	[illegible]
B	REVISED PER ECO # 00577	4/4/11	[illegible]
C	REVISED PER ECO # 00735	4/4/12	[illegible]
D	REVISED PER ECO # 00814	12-13-12	[illegible]





1. IF DIAL AND HOLD IS APPLIED WITH THIS ENCLOSURE REMOVE MP13 AND MP15 (ONE SPACER EACH SIDE)

NOTES: UNLESS OTHERWISE SPECIFIED

ITEM NO	PART OR IDENTIFYING NO	QTY REQD	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
LIST OF MATERIAL OR PARTS LIST						

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. 63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS ±[illegible] ANGLES ±1° HOLES (DRILL) ±[illegible] FINISH See Notes.

HALCYON — 101 VANDELI WAY CAMPBELL, CA 95008

ASSEMBLY- ENCLOSURE (101A)

DRAWN	DATE	10-12-06
BY		
APPROVED		
MATERIAL		

SIZE D — DRAWING NO ED-0001-45 — REV D

NEXT ASSY | QTY REQD | QTY PER | MODEL NO: 101A | 101A

SCALE 1/4 — STOCK AS BSOU — SHEET 1 of 1

DO NOT SCALE DWG

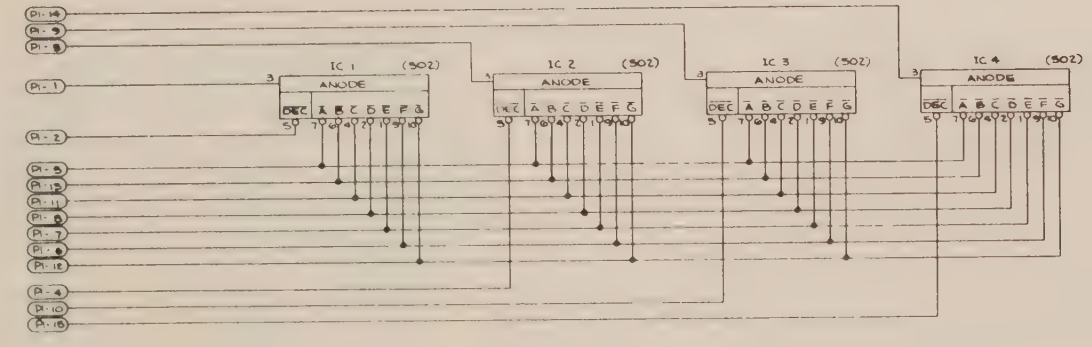
EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: A500-0001-05 ASSY-ENCLOSURE 701A UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ENG: 0 SHOP CODE:A TYPE: 1 ABC: X PLAN CODE: P DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	E W C	PART DESCRIPTION / REMARKS	PR CD	S C E	T Y P	S T K	A P R C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	2401-0020-00		KNOB-HANDLE RIGHT HAND THD #10-32 MP4	P	1				P	EA	1.00		01-JAN-79			
008	2401-0020-01		KNOB-HANDLE LEFT HAND THD #10-32 MP5	P	1			*	P	EA	1.00		01-JAN-79			
010	2500-0001-15		GRIP-HANDLE 701A MP3	P	1				P	EA	1.00					
015	2500-0001-43		HANDLE-701A MP2	P	1				P	EA	1.00					
020	2500-0001-44		ENCLOSURE-701A MP1	P	1				P	EA	1.00					
023	2500-0001-57		BACKING PLATE-FEET MP18-21	P	1				P	EA	4.00		05-MAY-78			
025	2500-0001-58		BACKING PLATE-HANDLE MP17	P	1				P	EA	1.00		01-JAN-79			
027	2500-0005-16		BACKING PLATE-HANDLE-LEFT SIDE MP16	P	1			*	P	EA	1.00		01-JAN-79			
030	2500-0003-69		SPACER-HANDLE, 700-SERIES MP12-15	P	1				P	EA	4.00					
035	2500-0003-70		SPACER-KNOB,700 SERIES MP6,7	P	1				P	EA	2.00					
037	2401-0022-04		NUT-TRIANGULAR 10 - 32 MP22,23	P	1			*	P	EA	2.00		01-JAN-79			
040	2802-0210-36		BUMPER-RECESSED MP8-11	P	1				P	EA	4.00					

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	2/5/76	O.P.



1. FOR MATL. LIST SEE B000-0002-45

NOTES- UNLESS OTHERWISE SPECIFIED

ITEM NO.	PART OR IDENTIFYING NO.	QTY REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
LIST OF MATERIAL OR PARTS LIST						

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
DIMENSIONS BEFORE PLATING
BREAK ALL SHARP CORNERS
63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON:
DECIMALS
ANGLES ±1°
HOLES (DRILL) ±.005 -.000
FINISH

HALCYON INC
301 VANDELL WAY
CAMPBELL, CA 95008

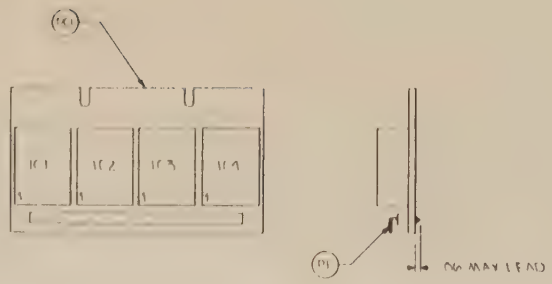
FREQUENCY DISPLAY BOARD-702

SIZE D | DRAWING NO. SD-0002-45 | REV A

SCALE — | WEIGHT AS — | SHEET 1

NEXT ASSY | QTY. USED | QTY. REQ'D. | MODEL NO.

DO NOT SCALE DRAWING



5. MOUNT ICS WITH PIN #1 IN POSITION SHOWN, (CATHODE MARK).

[4] A SOLDERING LEAD TEMPERATURE SOLDERING TIME NOT LESS THAN 4 SECONDS NOT EXCEED 230°C FOR 5 SECONDS, CAUTIONS ARE REQUIRED AT NO TIME DURING THE ASSEMBLY, IS A TEMPERATURE OF THE WORKING (SOLDERING) TIP EXCEED 350°C.

[5] LEARNING: ONLY THE LEADWIRE LEAD WIRES, CLINCHED, ARE TO BE AVAILABLE WHEN SOLDERING, TEMPERATURE WATTS

DO NOT HANDLE WIRES ABOVE LEAD ARMED WITH

SPRING TO PROTRUDE ON MAX FROM PART OF DEVICE.

FOR LIST OF MATERIALS, SEE NEXT PAGE.

SCHEMATIC, SEE

SEE NOTE 2, THIS DRAWING.

REVISED PER ECO 95

PCB ASSEMBLY

FREQUENCY DISPLAY

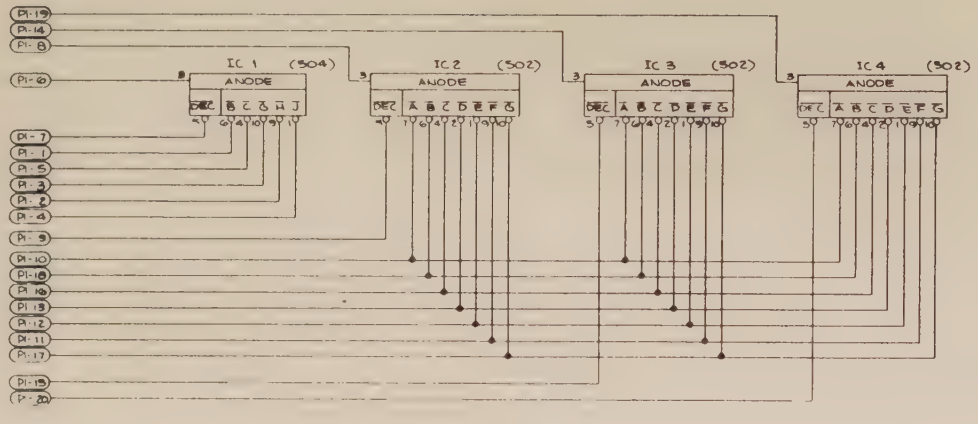
ID 0002 45

SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8000-0002-45 PCB ASSY-FREQ DISPLAY UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: A SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S C E	T Y P	S P R	A P C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1700-0002-45	PCB-FAB-FREQ DISPLAY PC1				P	1		P	EA	1.00					
010	2101-0012-20	CON SNGL IN-LINE 1 SP 20 POS P1				P	1		P	EA	1.00					
015	2400-0050-00	LAMP-LED SEVEN SEG RED IC1,2,3,4				P	1		P	EA	4.00					

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	12-8-77	



1 FOR MATL LIST SEE 8000-0002-46

NOTES - UNLESS OTHERWISE SPECIFIED

ITEM NO	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. 63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS ± ; ANGLES ± 1° ; HOLES (DRILL) +.000 −.005 ; FINISH

HALCYON INC. 501 VANDELL WAY CAMPBELL CA 95008

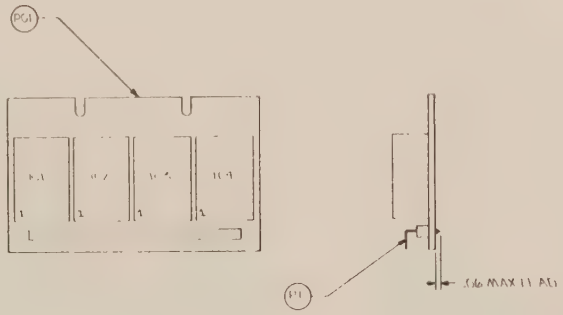
LEVEL DISPLAY BOARD

DATE 25OCT76 | SIZE D | DRAWING NO. SD-0002-46 | REV A

BY | DRAWING NO. | SCALE | STOCK NO | SHEET 1 OF 1

NEXT ASSY | QTY. NEXT | QTY. FINAL | MODEL NO.

DO NOT SCALE DRAWING



5. MOUNT IC'S WITH PIN #1 AT POSITION SHOWN, (SQUARE PADS).

4 A. SOLDERING: LEAD TEMP & SOLDERING TIME FOR IC.1 THRU IC.4 SHALL NOT EXCEED 230°C FOR 5 SECONDS. (WITHOUT PRE HEATING).
1. AT NO TIME DURING THE ASSY. PROCESS (EG. A COMBINATION OF PRE HEATING PRIOR TO SOLDERING) SHALL THE INTERNAL TEMPERATURE EXCEED 85°C.
B. CLEANING: ONLY THE FOLLOWING CLEANING SOLUTIONS ARE ACCEPTABLE: FREON TF, ISOPROPYL ALCOHOL OR WATER.
1. DO NOT IMMERSE HEATED ASSY IN COOL CLEANING SOLUTION.

3. PINS TO PROTRUDE .06 MAX FROM BACKSIDE OF PCB.
2. FOR LIST OF MATERIAL, SEE ED-0002-46.
1. FOR SCHEMATIC, SEE ED-0002-46.

NOTES UNLESS OTHERWISE SPECIFIED.

REVISIONS			
ITEM	REV	DESCRIPTION	DATE / APPROVED

PARTS LIST			
QTY REQD	CODE IDENT NO	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION / MATERIAL SPECIFICATION

NEXT ASSY	USED ON	APPLICATION
	102	

ALL NOTES

DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN	12/19/79
CHECKED	2-2-79
QUALITY ASSURANCE	
MFG APPROVAL	

PCB ASSY.
LEVEL DISPLAY

SIZE D | DWG NO ED-0002-46 | REV C

SCALE 2X | STOCK AS-1000 | SHEET 1 OF 1

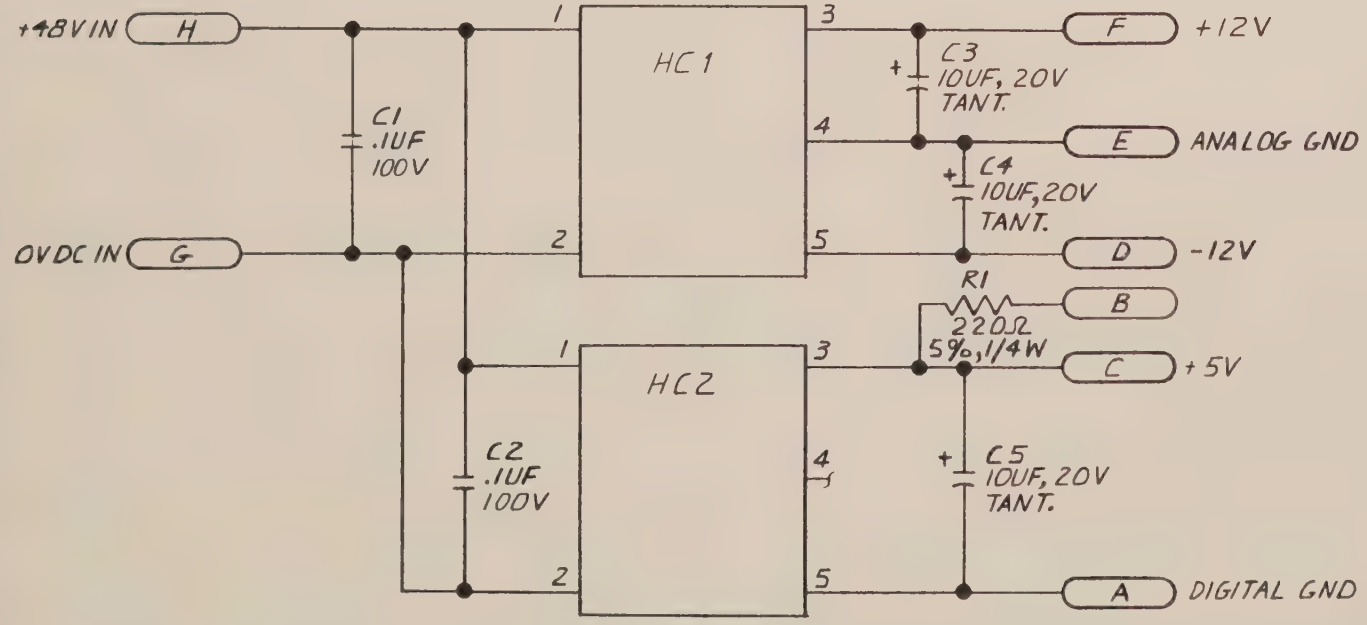
SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8000-0002-46 PCB ASSY-LEVEL DISPLAY UM: EA PROD CODE: ECN:- ASSEMBLY QTY: 1
Rpc: 8 SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	C E	Y P	S T R	A P C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1700-0002-46	PCB-FAB-LEVEL DISPLAY PC1				P	1		P	EA	1.00					
010	2101-0012-20	CON SNGL IN-LINE 1 SP 20 POS P1				P	1		P	EA	1.00					
015	2400-0049-00	LAMP-LED PLUS/MINUS RED IC1				P	1		P	EA	1.00					
020	2400-0050-00	LAMP-LED SEVEN SEG RED IC2,3,4				P	1		P	EA	3.00					

DWG NO. SD-1057-00 | SH 1 | REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	3-6-78	



1. FOR INTERCONNECTION WIRE LIST SEE WL-1057-15.

NOTES - UNLESS OTHERWISE SPECIFIED

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION

PARTS LIST

ED-1057-00	702A MOD
NEXT ASSY	
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± — DECIMALS .XX ± — .XXX ± — ANGLES ± —

MATERIAL
FINISH: SEE NOTES
DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN LONG. N	3-6-78
CHECKED	3-6-
ISSUED	7 - -
H Howard	3/8/78

WILCOX
2121 ZANKER ROAD
SAN JOSE CALIFORNIA 95131

DC/DC CONVERTER BD

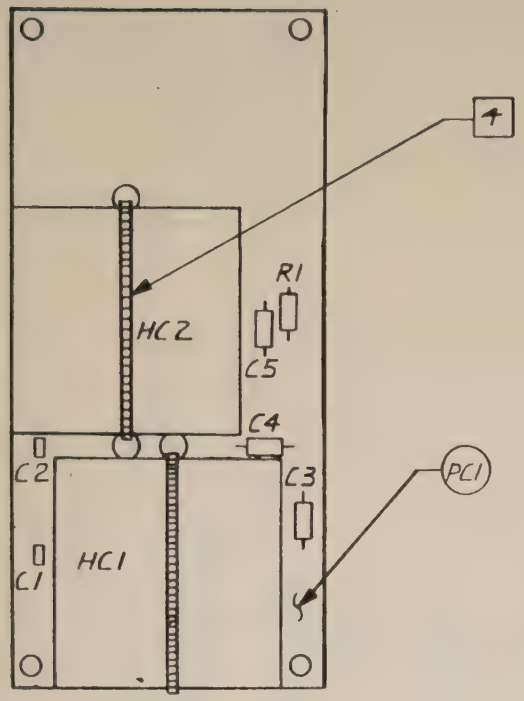
SIZE B | FSCM NO. | DWG. NO. SD-1057-00 | REV. A

SCALE NONE | SHEET 1 OF 1

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A 1184

ED-1057-00 | 1 | A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	3-3-78	



4 INSTALL ITEM 1 AS INDICATED.

3. SQUARE PAD DENOTES POS. END OF CAP.

2. FOR LISTS OF MATERIAL SEE 8000-1057-00

1. FOR SCHEMATIC SEE SD-1057-00

NOTES UNLESS OTHERWISE SPECIFIED

ITEM NO.	QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	
1	2	—	6002-0120-04	TIE WRAP 4	———	—

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± ——— DECIMALS .XX ± ——— .XXX ± ——— ANGLES ± ———

MATERIAL

FINISH SEE NOTES

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN LONG.N	2-9-78
CHECKED TB	3-6-78
ISSUED P.W. 3-8-78	
H. Hamed	3/8/78

SYLVYON INC. 2121 ZANKER ROAD SAN JOSE, CALIFORNIA 95131

PCB ASSEMBLY-
DC/DC CONVERTER BD

SIZE	FSCM NO.	DWG. NO.	REV.
B		ED-1057-00	A

SCALE NONE | STOCK AS: 8000 | SHEET 1 OF 1

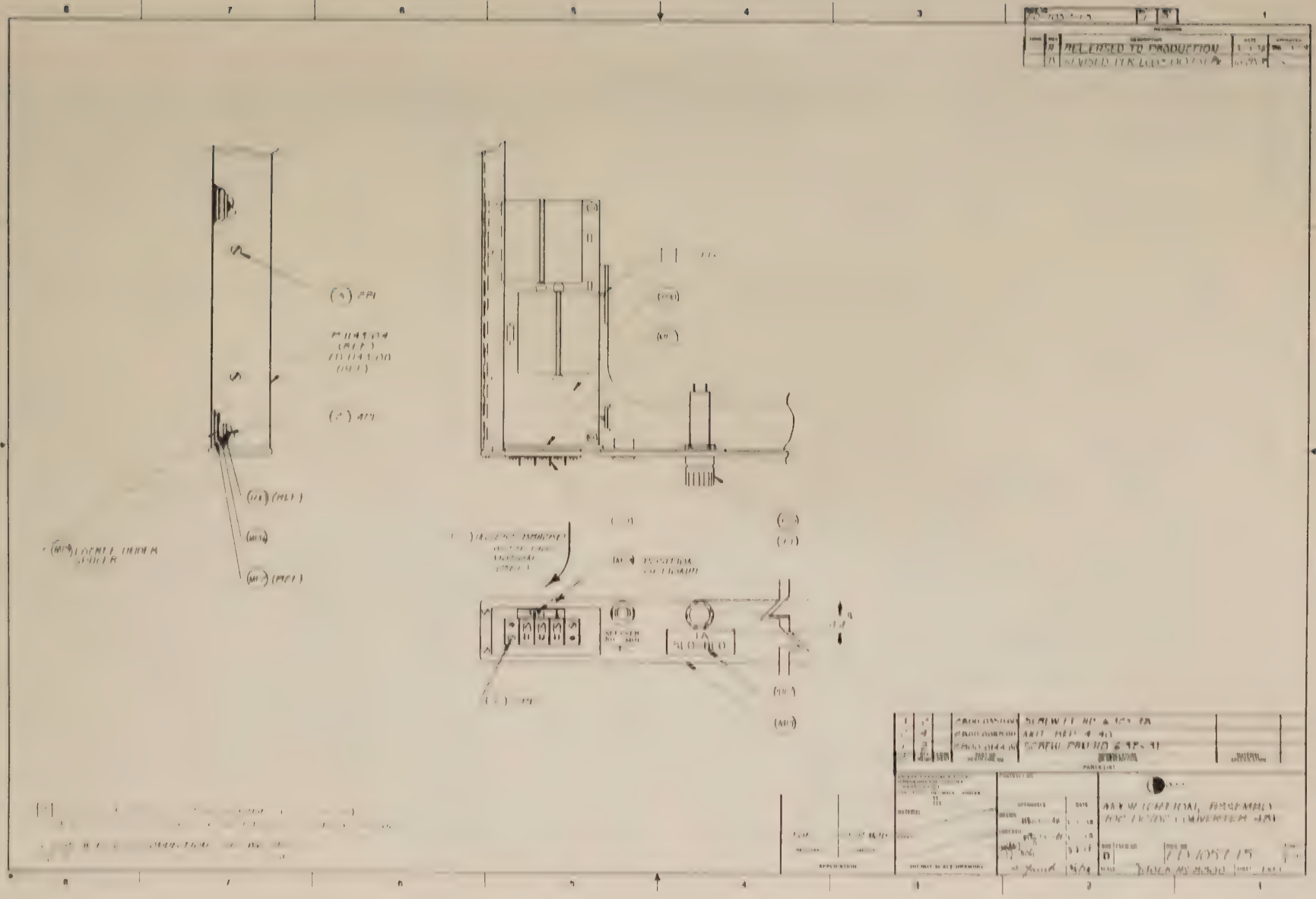
ED-1057-15	702 A MOD
NEXT ASSY	
APPLICATION	

BISHOP GRAPHICS/ACCUPRESS REORDER NO A 1184

SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8000-1057-00 ASSY PCB DC-DC CONVERTER UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: A SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	FR CD	BTCH TYPE	SCRAP FACT	APPR CODE	PL UM	EXTENDED QTY PER	ECN CHG	START DATE	S/N	CLOSE DATE	S/N
010	1501-0090-09	C-FXD CER .1UF +100-0% C1,C2			P	1		P EA	2.00		10-MAR-78			
020	1503-0181-00	C-FXD TA 10UF 10% 20WVDC C3-5			P	1	C	P EA	3.00		10-MAR-78			
030	1700-1057-00	PCB DC DC CONVERTER PC1			P	1	*	P EA	1.00		10-MAR-78			
040	4000-0024-02	RD48-5S600 CONVERTER DC-DC HC2			P	1	*	P EA	1.00		10-MAR-78			
041	4000-0024-03	RD48-12D250 CONVERTER DC-DC HC1			P	1	*	P EA	1.00		10-MAR-78			
050	4700-0381-00	R-FXD CC 220 OHM 5% 1/4W R1			P	1	C	P EA	1.00		10-MAR-78			


RELEASED TO PRODUCTION

SINGLE LEVEL BILLS OF MATERIAL

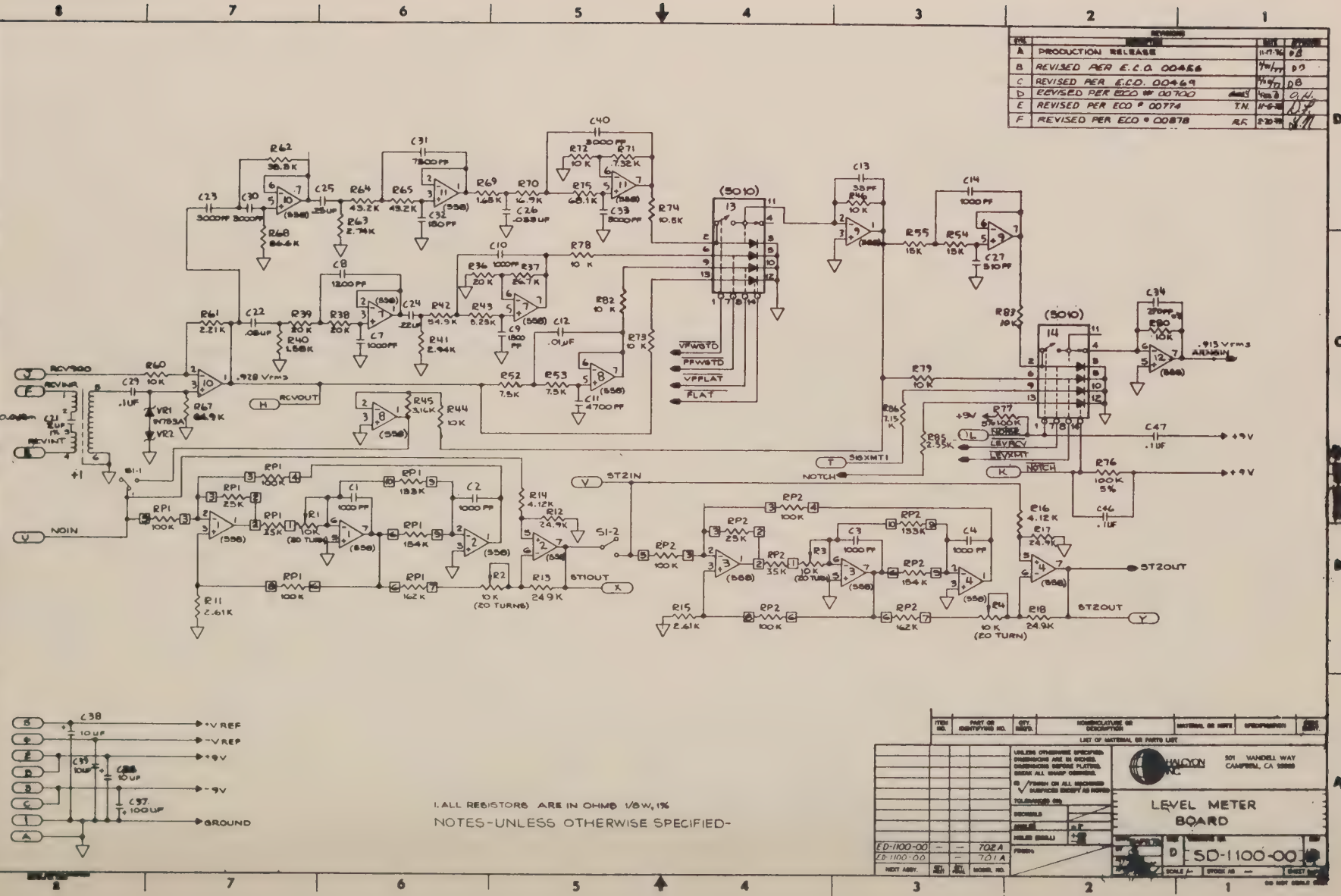
PARENT PART: 8800-1057-15 MOD BACK PANEL DC-DC CONVERTER UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: A SRCE CODE: A DATE: 00-XXX-00

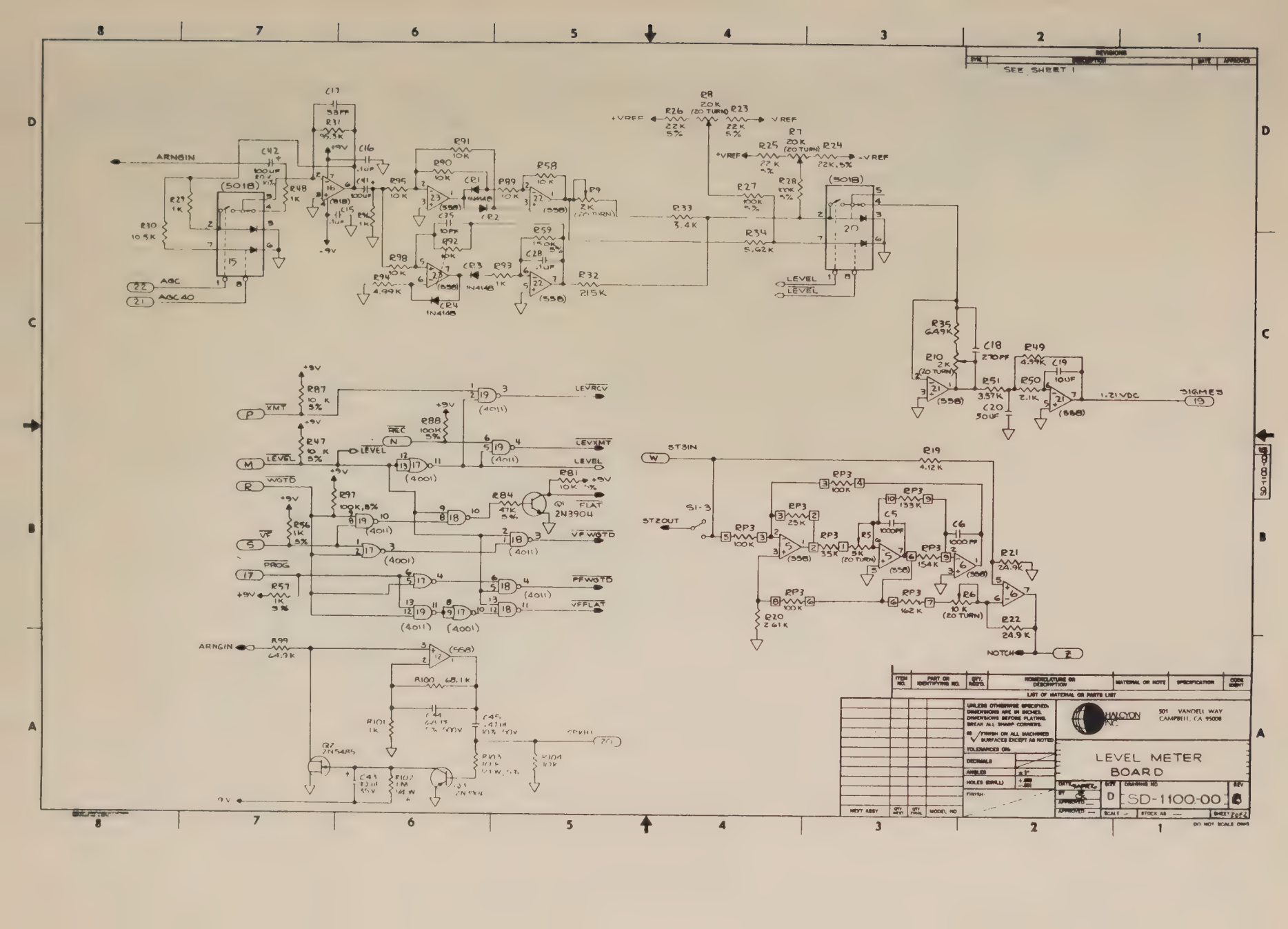
ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S C E	T Y P	S P R	A B C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
010	2100-0030-03	TERM STRIP-BARRIER 3POS TB1				P	1		P	EA	1.00		10-MAR-78			
020	2450-1057-21	LABEL FUSE RATING MP7				P	1	*	P	EA	1.00		10-MAR-78			
025	2450-1057-22	LABEL TERMINAL STRIP MP8				P	1	*	P	EA	1.00		10-MAR-78			
030	2500-1057-01	SIDE PLATE-RIGHT MP9				P	1		P	EA	1.00		10-MAR-78			
035	2500-1057-05	SIDE-PLATE STL MP1				P	1		P	EA	1.00		10-MAR-78			
040	2500-1057-10	BRACKET PCB DC-DC CONVERTER MP2				P	1	*	P	EA	1.00		10-MAR-78			
050	2800-7200-06	SPACER, .156 LG 4-40 X 1/4 DIN MP3-MP6				P	1	*	P	EA	4.00		10-MAR-78			
060	5101-0037-00	FUSE 1 AMP 125V MDL-1 F1				P	1	C	P	EA	1.00		10-MAR-78			
070	5101-0101-00	HOLDER-FUSE FH1				P	1	C	P	EA	1.00		10-MAR-78			
080	8000-1057-00	ASSY PCB DC-DC CONVERTER A10	A		A	1		*	P	EA	1.00		10-MAR-78			

WIRING LIST WL 1057 – 15 REV A

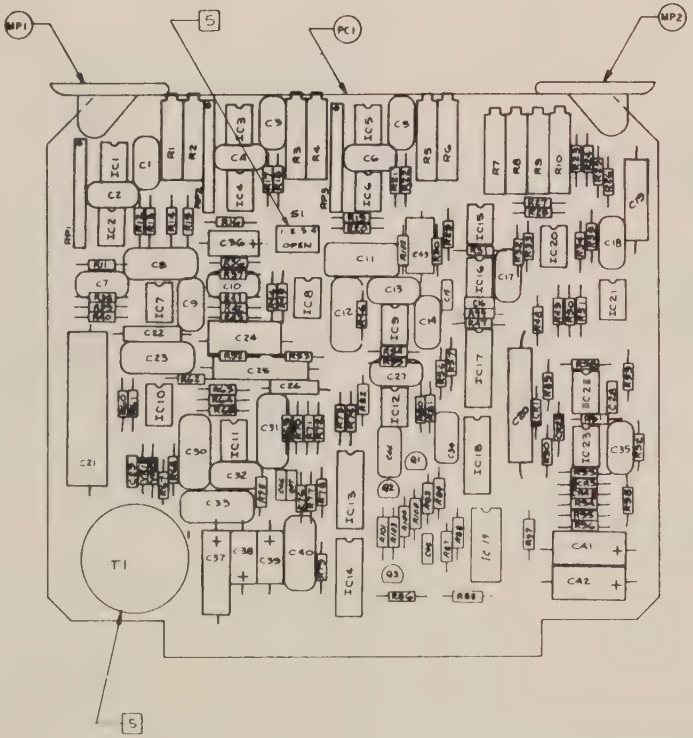
DATE 3.7.78 ECO Nº _____ SHEET 1 OF 1

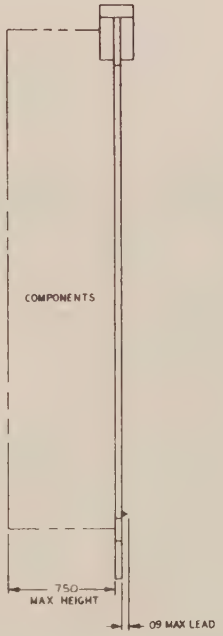
WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
4AWG	WHT	5½"	TB1	+48V	FUSE	IN	+48V IN
4AWG	WHT GRN	15"	FUSE	OUT	S1	3	+48V IN
4AWG	WHT RED	9½"	S1	4	A10	B	R1
4AWG	BLK	11"	S1	5	⚠	E10	ANALOG GND
4AWG	BLK	16½"	A10	E	⚠	E10	ANALOG GND
4AWG	WHT GRN	8"	S1	2	A10	H	+48V IN
4AWG	GRN	9"	TB1	-48V	A10	G	0 VDC IN
4AWG	BRN	12"	A10	F	⚠ -IC1	3	+12V
4AWG	ORG	10"	A10	C	⚠ -CR2	NEG	+5V
4AWG	WHT BLK	8½"	A10	A	⚠ -DQ3	4	DIGITAL GND
4AWG	RED	11½"	A10	D	⚠ -C2	NEG	-12V
4AWG	ORG	2"	⚠ -IC3	3	⚠ -IC2	2	+5V
4AWG	BLK	2½"	TB1	GND	A10	MOUNTING LUG	CHASSIS GROUND
⚠	=	PCB ASSY COMMON ANALOG REF. DESIG. (A2) MATERIAL LIST 9000-1143-00 (702)					
		and ED-1143-00.					


REVISIONS
A PRODUCTION RELEASE 11-17-76 DB
B REVISED PER E.C.O. 00456 7-11-77 DB
C REVISED PER E.C.O. 00469 11-8-77 DB
D REVISED PER ECO # 00700 2-28-78 DB
E REVISED PER ECO # 00774 11-6-78 DB
F REVISED PER ECO # 00878 8-20-79 DB
(5010)
RCV300
RCVINR
RCVINT
RCVOUT
NOIN
ST1IN
ST1OUT
ST2IN
ST2OUT
VFWGTD
PFWGTD
VFFLAT
FLAT
S16XMT1
LEVACV
LEVXMT
NOTCH
ARMSIN
.913 Vrms
.928 Vrms
+9V
+1
S1-1
S1-2
+V REF
-V REF
+9V
-9V
GROUND
1. ALL RESISTORS ARE IN OHMS 1/8W, 1%
NOTES-UNLESS OTHERWISE SPECIFIED-
CHALCON INC.
301 WANDELL WAY
CAMPBELL, CA 95008
LEVEL METER BOARD
SD-1100-00
D
ED-1100-00 -- -- 702A
ED-1100-00 -- -- 701A


SEE SHEET 1
ARNGIN
AGC
AGC 40
(5018)
(558)
(4011)
(4001)
+VREF
-VREF
VREF
LEVEL
LEVRCV
LEVXMT
VF WGTD
PFWGTD
VFFLAT
FLAT
ST3IN
ST2OUT
NOTCH
1.21 VDC
SIGMES
2N3904
2N4856
HALCYON INC.
501 VANDELI WAY
CAMPBELL, CA 95008
LEVEL METER BOARD
SD-1100-00
REV D
SHEET 2 OF 4

REVISIONS			
STR	DESCRIPTION	DATE	
1	REVISED PER ECO # 00178	99 71	





5 T1 & S1 TO BE HAND SOLDERED; DO NOT IMMERSE IN SOLVENT
4 FOR PERFORMANCE SPEC. SEE X 1100 (X)
3. ■ SQUARE PADS DENOTES CATHODE END OF DIODE, POS END OF CAP, EMITTER OF TRANSISTOR OR GATE OF FET
2. FOR LIST OF MATERIALS SEE 8000-1100-00
1 FOR SCHEMATIC SEE SD-1100-00

NOTES - UNLESS OTHERWISE SPECIFIED:

ITEM NO	PART OR IDENTIFYING NO	QTY REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
LIST OF MATERIAL OR PARTS LIST						

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DIMENSIONS BEFORE PLATING
BREAK ALL SHARP CORNERS
63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON:
DECIMALS
ANGLES ±1°
HOLES (DRILL) ±.005 -.000
FINISH SEE NOTES

SOT - VANDEL WAY
CAMPBELL CA 95008

PCB ASSEMBLY-
LEVEL METER BD.

NEXT ASSY	QTY INDET	QTY PARTS	MODEL NO
			701A
			701A
			701A
			701A
			701A

DATE 3-9-99
BY
APPROVED
SIZE D
DRAWING NO ED-1100-00
REV C
SCALE 2:1
STOCK AS 8000
SHEET 1 OF 1
DO NOT SCALE DWG

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1100-00 PCB ASSY LEVEL METER BR UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: H SRCE CODE:A TYPE: 1 ABC: Y PLAN CODE: P DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	E R C	PART DESCRIPTION / REMARKS	PR CD	S C E	T Y P	S P R	A H C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1401-0011-00		EJECTOR-PCB MP1,2		P	1		C	P	EA	2.00					
010	1500-0055-00		C-FXD MICA 10PF 5% 500V C35		P	1		C	P	EA	1.00					
015	1500-0064-00		C-FXD MICA 33PF 5% 500V C13,17		P	1		C	P	EA	2.00					
018	1500-0073-00		C-FXD MICA 68PF 5% 500V C44		P	1		C	P	EA	1.00		13-MAR-79			
020	1500-0136-00		C-FXD MICA 180PF 5% 500V C32,34		P	1		C	P	EA	2.00		04-MAY-79			
025	1500-0141-00		C-FXD MICA 270PF 5% 500V C18		P	1		C	P	EA	1.00		04-MAY-79			
030	1500-0148-00		C-FXD MICA 500PF 5% 500V C27		P	1		C	P	EA	1.00					
035	1500-0156-00		C-FXD MICA 1000PF 5% 100V C7,10,14		P	1		C	P	EA	3.00					
040	1500-0199-00		C-FXD MICA 1200PF 5% 500V C8		P	1		C	P	EA	1.00					
045	1500-0201-00		C-FXD MICA 1500PF 5% 500V C9		P	1		C	P	EA	1.00					
050	1500-0214-00		C-FXD MICA 4700PF 5% 500V C11		P	1		B	P	EA	1.00					
055	1500-5209-00		C-FXD MICA 3000PF 1% 500V C23,30,33,40		P	1		C	P	EA	4.00					
060	1500-5219-00		C-FXD MICA 7500PF 1% 100V C31		P	1		B	P	EA	1.00					
065	1501-0074-00		C-FXD CER .1UF 10% 100V C15,16,28,29,46,47		P	1		C	P	EA	6.00		13-MAR-79			
067	1501-0082-00		C-FXD CER .47UF 10% 50V C45		P	1		B	P	EA	1.00		13-MAR-79			
070	1502-0013-00		C-FXD MET POLY 0.01UF 1% C12		P	1		B	P	EA	1.00					
075	1502-0019-00		C-FXD MET POLY 0.033UF 1% C26		P	1		B	P	EA	1.00					
080	1502-0029-00		C-FXD MET POLY 0.22UF 1% C24		P	1		B	P	EA	1.00					
085	1502-0039-00		C-FXD MET POLY 2.0UF 1% C21		P	1		B	P	EA	1.00					
090	1502-0046-00		C-FXD MET POLY 0.25UF 1% C25		P	1		B	P	EA	1.00					
095	1502-0049-00		C-FXD MET POLY .05UF 1% C22		P	1		B	P	EA	1.00					
100	1503-0084-00		C-FXD TA 100UF 10% 10WVDC C41,42		P	1		B	P	EA	2.00		07-NOV-78			
110	1504-0044-00		C-FXD AL ELECT 100UF 25V C37		P	1		C	P	EA	1.00					
115	1504-0052-00		C-FXD AL ELECT 10UF 35V C36,38,39,43		P	1		C	P	EA	4.00		13-MAR-79			
120	1505-0006-00		C-FXD NON POLAR 500F 15V C20		P	1		C	P	EA	1.00					

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1100-00 PCB ASSY LEVEL METER BR UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ENG: H SRCE CODE:A TYPE: 1 ABC: Y PLAN CODE: P DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	E W C	PART DESCRIPTION / REMARKS	PR CD	S T C E	S Y P P	S A P R	P L C N	UM	EXTENDED QTY PER	ECN CHG	START DATE	S/N	CLOSE DATE	S/N
125	1505-0007-00		C-FXD NON POLAR 100F 15V C19	P	1		C	P	EA	1.00					
130	1505-0006-00		C-FXD MICA 1000PF 1% 100V C1-6	P	1		C	P	EA	6.00					
135	1700-1100-00		PCB-LEVEL METER BRD PC1	P	1			P	EA	1.00					
140	2101-0000-00		CON-8 PIN IC SCK SKT. 1-12,15,16, 20-23	P	1		C	P	EA	18.00					
145	2101-0000-01		CON-14 PIN IC SCK LO PR SKT. 13,14,17-19	P	1			P	EA	5.00					
150	3130-4001-00		IC-4001 QUAD 2 IN NOR MOS IC17	P	1		C	P	EA	1.00					
155	3130-4011-00		IC-4011 QUAD 2 IN NAND MOS IC18,19	P	1		C	P	EA	2.00					
160	3131-0005-00		IC-1456 LINEAR OP AMP DUAL IC1-12,21-23	P	1		C	P	EA	15.00					
165	3131-0010-00		IC-318 LINEAR OP AMP IC16	P	1			P	EA	1.00					
170	3132-0004-01		IC-5010P-CHNL ANALOG SEW IC13,14	P	1		B	P	EA	2.00					
175	3132-0004-03		IC-5018P-CHNL ANALOG SW IC15,20	P	1		B	P	EA	2.00					
180	4700-0397-00		R-FXD CC 1000 OHM 5% 1/4W R56,57	P	1		C	P	EA	2.00					
185	4700-0421-00		R-FXD CC 10K OHM 5% 1/4W R47,61,87,103	P	1		C	P	EA	4.00		13-MAR-79			
190	4700-0429-00		R-FXD CC 22K OHM 5% 1/4W R23-26	P	1		C	P	EA	4.00					
195	4700-0437-00		R-FXD CC 47K OHM 5% 1/4W R84	P	1		C	P	EA	1.00					
200	4700-0445-00		R-FXD CC 100K OHM 5% 1/4W R27,28,76,77,88,97	P	1		C	P	EA	6.00					
205	4700-0449-00		R-FXD CC 150K OHM 5% 1/4W R59	P	1		C	P	EA	1.00					
207	4700-0469-00		R-FXD CC 1.0M OHM 5% 1/4W R102	P	1		C	P	EA	1.00		13-MAR-79			
210	4703-0193-00		R-FXD MF 1000 OHM 1% 1/8W R29,48,93,96,101	P	1		C	P	EA	5.00		13-MAR-79			
215	4703-0212-00		R-FXD MF 1580 OHM 1% 1/8W R40	P	1		C	P	EA	1.00					
220	4703-0214-00		R-FXD MF 1650 OHM 1% 1/8W R69	P	1		C	P	EA	1.00					
225	4703-0224-00		R-FXD MF 2100 OHM 1% 1/8W R50	P	1		C	P	EA	1.00					
230	4703-0226-00		R-FXD MF 2210 OHM 1% 1/8W R61	P	1		C	P	EA	1.00					
235	4703-0232-00		R-FXD MF 2550 OHM 1% 1/8W R85	P	1		C	P	EA	1.00					
240	4703-0233-00		R-FXD MF 2610 OHM 1% 1/8W	P	1		C	P	EA	3.00					

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: A000-1100-00 PCB ASSY LEVEL METER HR UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: H SMCE CODE: A TYPE: 1 ABC: Y PLAN CODE: P DATE: 00-XXX-00

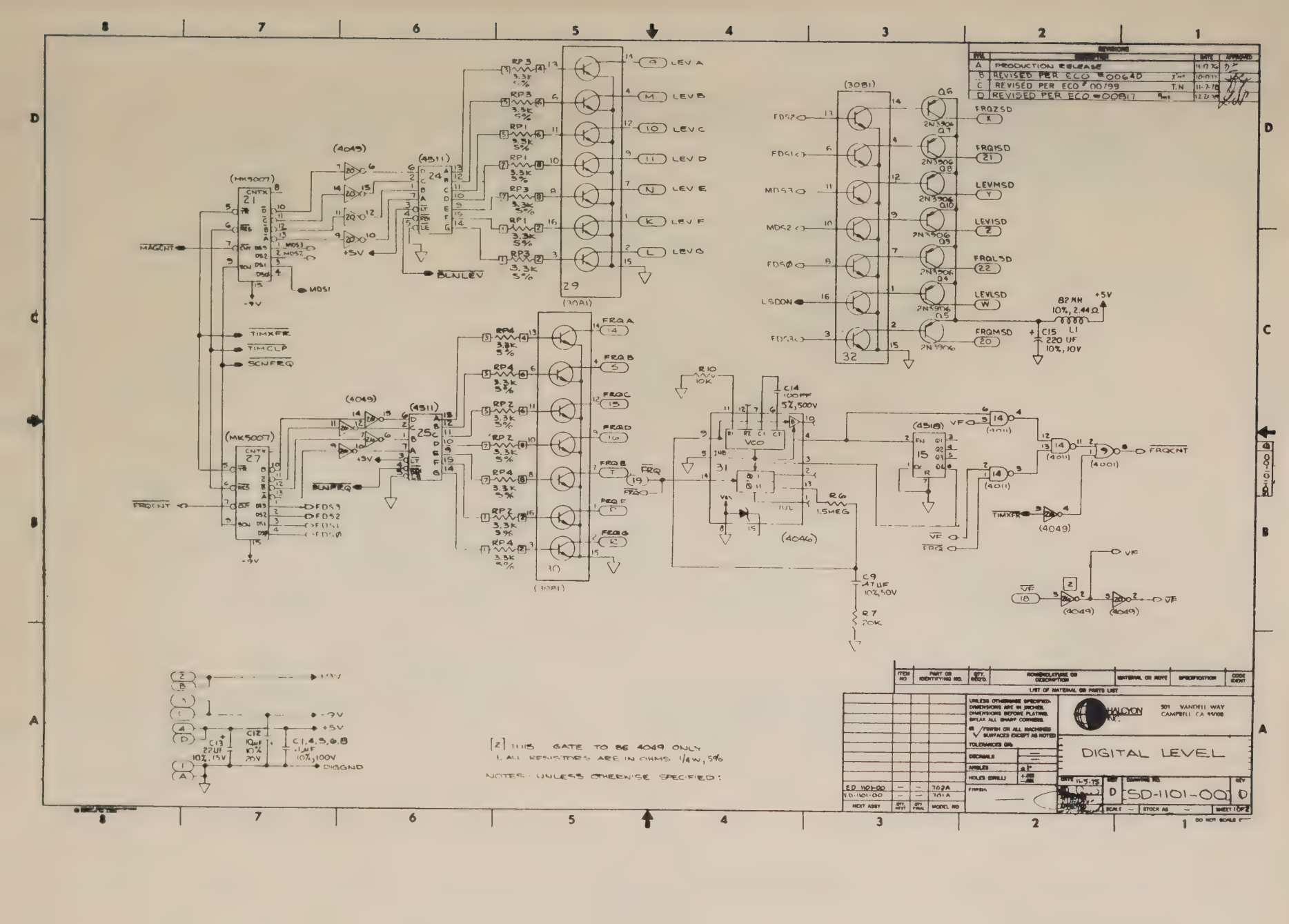
ITEM NO.	COMPONENT PARTS	E R C	PART DESCRIPTION / REMARKS	S T PR CD	S T C E	S Y P P	S A P R C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	S/N	CLOSE DATE	S/N
			R11,15,20												
245	4703-0235-00		R-FXD MF 2740 OHM 1% 1/8W R65		P	1	C	P	EA	1.00					
250	4703-0238-00		R-FXD MF 2940 OHM 1% 1/8W R41		P	1	C	P	EA	1.00					
255	4703-0241-00		R-FXD MF 3160 OHM 1% 1/8W R45		P	1	C	P	EA	1.00					
258	4703-0244-00		R-FXD MF 3400 OHM 1% 1/8W R33		P	1	C	P	EA	1.00		07-MAR-78			
260	4703-0246-00		R-FXD MF 3570 OHM 1% 1/8W R51		P	1	C	P	EA	1.00					
265	4703-0252-00		R-FXD MF 4120 OHM 1% 1/8W R14,16,19		P	1	C	P	EA	3.00		07-MAR-78			
275	4703-0260-00		R-FXD MF 4990 OHM 1% 1/8W R49,94		P	1	C	P	EA	2.00					
277	4703-0262-00		R-FXD MF 5230 OHM 1% 1/8W R43		P	1	C	P	EA	1.00		07-MAR-78			
280	4703-0265-00		R-FXC MF 5620 OHM 1% 1/8W R34		P	1	C	P	EA	1.00					
285	4703-0271-00		R-FXD MF 6490 OHM 1% 1/8W R35		P	1	C	P	EA	1.00					
290	4703-0275-00		R-FXD MF 7150 OHM 1% 1/8W R86		P	1	C	P	EA	1.00					
295	4703-0276-00		R-FXD MF 7320 OHM 1% 1/8W R71		P	1	C	P	EA	1.00					
300	4703-0277-00		R-FXD MF 7500 OHM 1% 1/8W R52,53		P	1	C	P	EA	2.00					
305	4703-0289-00		R-FXD MF 10.0K OHM 1% 1/8W R44,46,58,60,72,73, 78-80,82,83,89, 90-92,95,98,104		P	1	C	P	EA	18.00		13-MAR-79			
310	4703-0291-00		R-FXD MF 10.5K OHM 1% 1/8W R30,R74		P	1	C	P	EA	2.00		07-MAR-78			
315	4703-0306-00		R-FXD MF 15.0K OHM 1% 1/8W R54,55		P	1	C	P	EA	2.00					
320	4703-0311-00		R-FXD MF 16.9K OHM 1% 1/8W R70		P	1	C	P	EA	1.00					
325	4703-0318-00		R-FXD MF 20.0K OHM 1% 1/8W R36,38,59		P	1	C	P	EA	3.00					
330	4703-0321-00		R-FXD MF 21.5K OHM 1% 1/8W R32		P	1	C	P	EA	1.00					
335	4703-0327-00		R-FXD MF 24.9K OHM 1% 1/8W R12,13,17,18,21,22		P	1	C	P	EA	6.00					
340	4703-0330-00		R-FXD MF 26.7K OHM 1% 1/8W R37		P	1	C	P	EA	1.00					
345	4703-0345-00		R-FXD MF 38.3K OHM 1% 1/8W R62		P	1	C	P	EA	1.00					
350	4703-0350-00		R-FXD MF 43.2K OHM 1% 1/8W R64,65		P	1	C	P	EA	2.00					
353	4703-0360-00		R-FXD MF 54.9K OHM 1% 1/8W		P	1	C	P	EA	1.00		07-MAR-78			

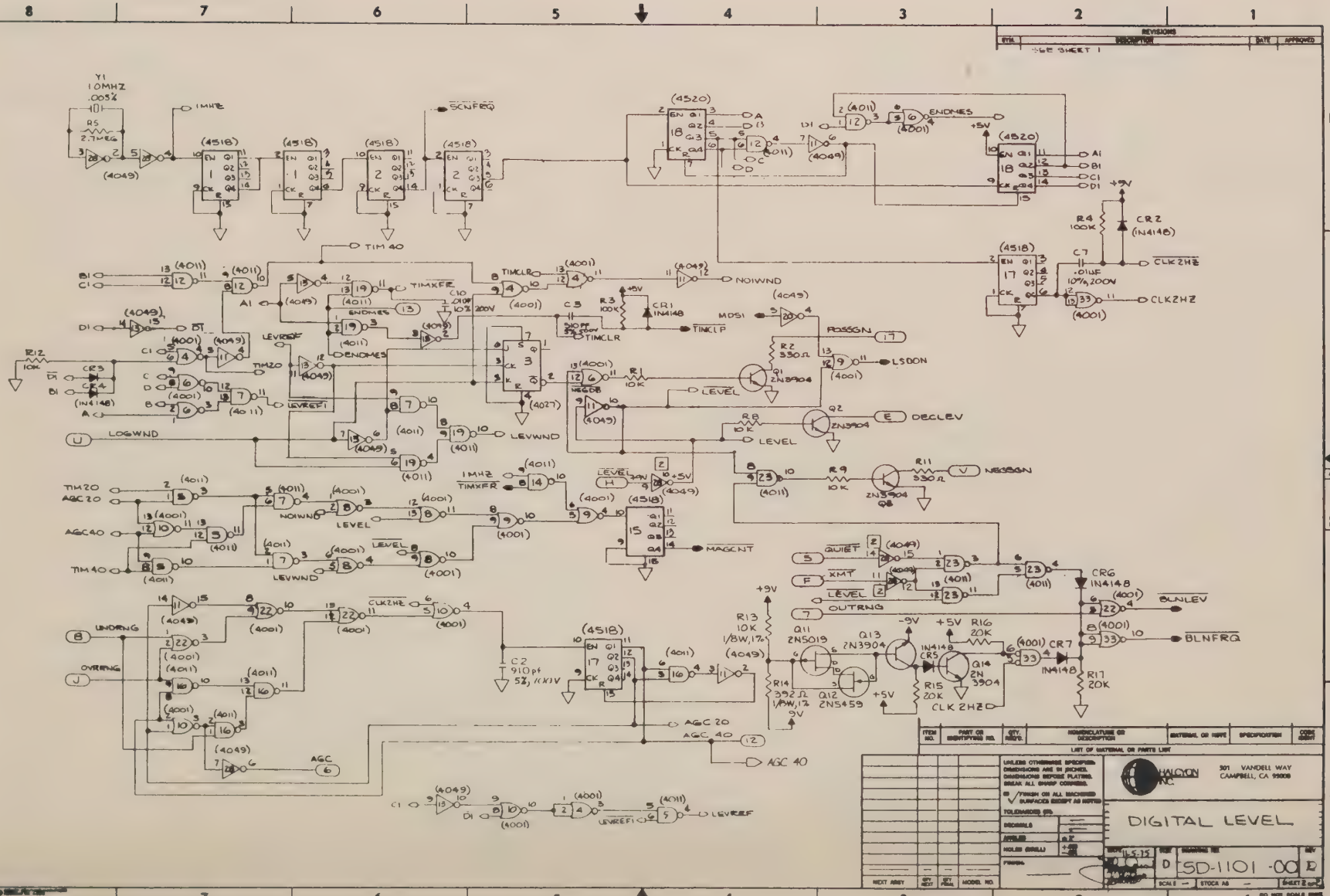
EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

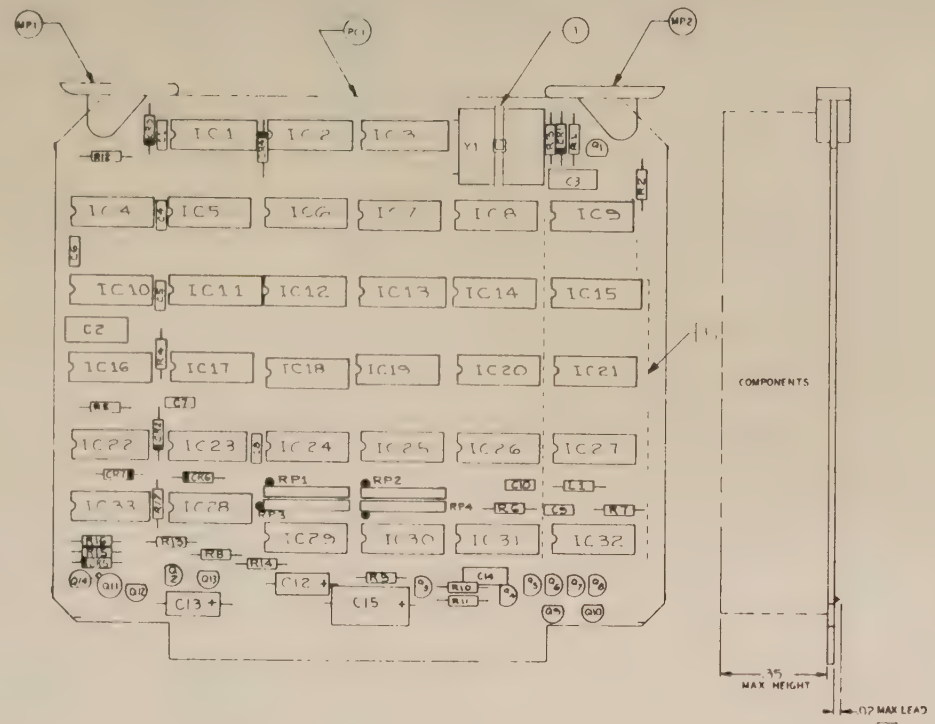
PARENT PART: 8000-1100-00 PCB ASSY LEVEL METER BR UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: M SRCE CODE:A TYPE: 1 ABC: Y PLAN CODE: P DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	E R C	PART DESCRIPTION / REMARKS	PR CD	S C E	T Y P	S P R	A B C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	S/N	CLOSE DATE	S/N
			R42													
355	4703-0367-00		R-FXD MF 64.9K OHM 1% 1/8W	P	1			C	P	EA	2.00		13-MAR-79			
			R67,99													
365	4703-0369-00		R-FXD MF 68.1K OHM 1% 1/8W	P	1			C	P	EA	2.00		13-MAR-79			
			R75,100													
370	4703-0379-00		R-FXD MF 86.6K OHM 1% 1/8W	P	1			C	P	EA	1.00					
			R68													
375	4703-0383-00		R-FXD MF 95.3K OHM 1% 1/8W	P	1			C	P	EA	1.00					
			R31													
380	4710-0006-00		R-PACK BCD NET 10 PIN 1%	P	1				P	EA	3.00					
			RP1-3													
385	4750-0028-00		R-VAR 20 TURN 2K OHM	P	1			B	P	EA	2.00					
			R9,10													
390	4750-0029-00		R-VAR 20 TURN 5K OHM	P	1			B	P	EA	1.00					
			R5													
395	4750-0030-00		R-VAR 20 TURN 10K OHM	P	1			B	P	EA	5.00					
			R1-4,6													
400	4750-0031-00		R-VAR 20 TURN 20K OHM	P	1			B	P	EA	2.00					
			R7,8													
405	4800-3904-00		TSTR-NPN SI SM 2N3904	P	1			C	P	EA	1.00					
			Q1													
407	4800-3906-00		TSTR-PNP SI SM 2N3906	P	1			C	P	EA	1.00		13-MAR-79			
			Q3													
409	4800-5485-00		TSTR-N-CHNL J-FET 2N5485	P	1			C	P	EA	1.00		13-MAR-79			
			Q2													
410	4802-0753-00		DIODE-ZENER 6.2V 1N753A	P	1			C	P	EA	2.00					
			VR1,2													
415	4802-4148-00		DIODE-SWITCHING 1N4148	P	1			C	P	EA	4.00					
			CR1-4													
420	5100-5151-00		SW-ROCKER DIP 8 PINS	P	1			B	P	EA	1.00					
			S1													
425	5600-0004-01		XFORMER-SIGNAL IN 20K	P	1				P	EA	1.00					
			T1													


REVISIONS
A PRODUCTION RELEASE
B REVISED PER ECO #00640
C REVISED PER ECO #00799
D REVISED PER ECO #00817
(MK5007)
(4049)
(4511)
(3081)
MAGCNT
FRQCNT
TIMXFR
TIMCLR
SCNFRQ
BLNLEV
BLNFRQ
MDS1
MDS2
MDS3
FDS0
FDS1
FDS2
FDS3
LSDON
LEV A
LEV B
LEV C
LEV D
LEV E
LEV F
LEV G
FRQ A
FRQ B
FRQ C
FRQ D
FRQ E
FRQ F
FRQ G
FRQ
VCO
(4046)
(4518)
(4011)
(4001)
R10 10K
C14 100PF 5%,500V
R6 1.5MEG
C9 .47 UF 10%,50V
R7 20K
82 MH 10%, 2.44Ω
L1
C15 220 UF 10%, 10V
FRQZSD
FRQ1SD
LEVMSD
LEVISD
FRQLSD
LEVLSD
FRQMSD
C13 22UF 10%, 15V
C12 10μF TA 10% 20V
C1,4,5,6,8 .1μF 10%,100V
DIGGND
[2] 1115 GATE TO BE 4049 ONLY
1. ALL RESISTORS ARE IN OHMS 1/4W, 5%
NOTES: UNLESS OTHERWISE SPECIFIED:
HALCYON INC.
501 VANDELL WAY
CAMPBELL CA 95008
DIGITAL LEVEL
SD-1101-00
SIZE D
REV D
SCALE —
SHEET 1 OF 2
DO NOT SCALE


SEE SHEET 1
Y1 1.0MHZ .005%
R5 2.7MEG
1MHZ
SCNFRQ
(4518)
(4520)
(4049)
(4011)
(4001)
(4027)
ENDMES
+5V
TIM40
TIMXFR
TIMCLR
NOIWND
R3 100K
CR1 IN4148
TIMCLP
MOSI
ROSSGN
LSDON
R12 10K
CR3
CR4
IN4148
TIM20
LEVREF
LEVREF1
R2 330Ω
Q1 2N3904
LEVEL
R1 10K
NEGDB
Q2 2N3904
DECLEV
R8 10K
LOGWND
LEVWND
R9 10K
R11 330Ω
Q3 2N3904
NEGSGN
AGC20
AGC40
NOIWND
MAGCNT
QUIET
XMT
OUTRNG
CR6 IN4148
BLNLEV
BLNFRQ
UNDRNG
OVRNG
C2 910pf 5% 100V
R13 10K 1/8W,1%
Q11 2N5019
Q13 2N3904
Q12 2N5459
R14 392Ω 1/8W,1%
-9V
+5V
R16 20K
CR5 IN4148
Q14 2N 3904
R15 20K
CLK 2HZ
CR7 IN4148
R17 20K
C7 .01uF 10% 200V
CR2 (IN4148)
CLK2HZ
AGC 20
AGC 40
AGC
LEVREF
C3 .001uF 200V
C10 .01uF 10% 200V
HALCYON INC.
301 VANDELL WAY CAMPBELL, CA 95008
DIGITAL LEVEL
SD-1101-00
D

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
G	REVISED PER ECO#00081	KS	7-5-79



ITEM NO	PART OR IDENTIFYING NO	QTY REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
1	6002-0170-00	1	TIE WRAP			

LIST OF MATERIAL OR PARTS LIST

5 TRIM LEADS ON CIRCUIT SIDE OF PCB TO WITHIN .02 TO PREVENT SHORTING.

4 DO NOT INSTALL SOCKETS FOR IC9,15,21,27 AND 32.

3 ■ SQUARE PADS DENOTES CATHODE END OF DIODE, POS END OF CAP, EMITTER OF TRANSISTOR OR GATE OF FET

2 FOR LIST OF MATERIALS SEE 8000-

1 FOR SCHEMATIC SEE SD-

NOTES - UNLESS OTHERWISE SPECIFIED:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. ⊠ /FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS, ANGLES ±1°, HOLES (TOTAL) +.002 -.001. FINISH: SEE NOTE 3.

HEATH/ZENITH — SOLD THROUGH HEATH COMPANY DISTRIBUTORS

PCB ASSEMBLY
DIGITAL LEVEL

DATE	SIZE	DRAWING NO	REV
2-5-79	D	ED-1101-00	G

SCALE 2:1 | STOCK AT 8000 | SHEET 1 OF 1

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1101-00 PCB ASSY-DIGITAL LEVEL UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
FRC: F SRCE CODE:A TYPE: 1 ARC: Y PLAN CODE: P DATE: 00-XXX-00

ITEM NO	COMPONENT PARTS	E C	PART DESCRIPTION / REMARKS	PR CD	S T E	S T Y	S A P R	P L C	UM	EXTENDED QTY PER	ECN CHG	START DATE	S/N	CLOSE DATE	S/N
005	1401-0011-00		EJECTOR-PCB MP1,2	P	1		C	P	EA	2.00					
010	1500-0077-00		C-FXD MICA 100PF 5% 500V C14	P	1		C	P	EA	1.00					
015	1500-0148-00		C-FXD MICA 510PF 5% 500V C3	P	1		C	P	EA	1.00					
017	1500-0155-00		C-FXD MICA 910PF 5% 100V C2	P	1		C	P	EA	1.00		23-DEC-77			
020	1501-0042-00		C-FXD CER 10000PF 10% C7,10	P	1		C	P	EA	2.00					
025	1501-0074-00		C-FXD CER .1UF 10% 100V C1,4-6,8	P	1		C	P	EA	5.00					
030	1501-0082-00		C-FXD CER .47UF 10% 50V C9	P	1		B	P	EA	1.00					
032	1503-0088-00		C-FXD TA 220UF 10% 10WVDC C15	P	1		B	P	EA	1.00		14-DEC-78			
033	1503-0125-00		C-FXD TA 22UF 10% 15WVDC C13	P	1		C	P	EA	1.00		14-DEC-78			
035	1503-0181-00	1	C-FXD TA 10UF 10% 20WVDC C12	P	1		C	P	EA	1.00					
045	1700-1101-00		PCB-DIGITAL LEVEL PC1	P	1			P	EA	1.00					
048	1800-0036-00		COIL-FXD RF 82 UH 5% L1	P	1		C	P	EA	1.00		14-DEC-78			
050	2101-0000-01		CON-14 PIN IC SCK LO PR SKT.4-8,10,12,14,16, 19,22,23	P	1			P	EA	12.00					
055	2101-0000-02		CON-16 PIN IC SCK LO PR SKT. 1-3,11,14,17, 18,20,24-26,28-31	P	1			P	EA	15.00					
060	2300-0001-00		CRYSTAL-1.0 MHZ .005% Y1	P	1		B	P	EA	1.00					
065	3130-4001-00		IC-4001 QUAD 2 IN NOR MOS IC4,6,8-10,22,33	P	1		C	P	EA	7.00		05-MAR-79			
070	3130-4011-00		IC-4011 QUAD 2 IN NAND MOS IC5,7,12,14,16,19,23	P	1		C	P	EA	7.00					
075	3130-4027-00		IC-4027 DUAL J-K FLCP MOS IC3	P	1		C	P	EA	1.00					
080	3130-4046-00		IC-4046 PHASE LOCK LP MOS IC31	P	1		B	P	EA	1.00					
085	3130-4049-00		IC-4049 HEX INV BUFFER MOS IC11,13,20,26,28	P	1		C	P	EA	5.00					
090	3130-4511-00		IC-4511 BCD/7SEG DCOD MOS IC24,25	P	1		B	P	EA	2.00					
095	3130-4518-00		IC-4518 DUAL BCD CNTR MOS IC1,2,15,17	P	1		B	P	EA	4.00					
100	3130-4520-00		IC-4520 DUAL BIN CNTR MOS IC18,	P	1		B	P	EA	1.00					
105	3130-5007-00		IC-5007 4 CTR W/SCN TA IC21,27	P	1		B	P	EA	2.00					

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

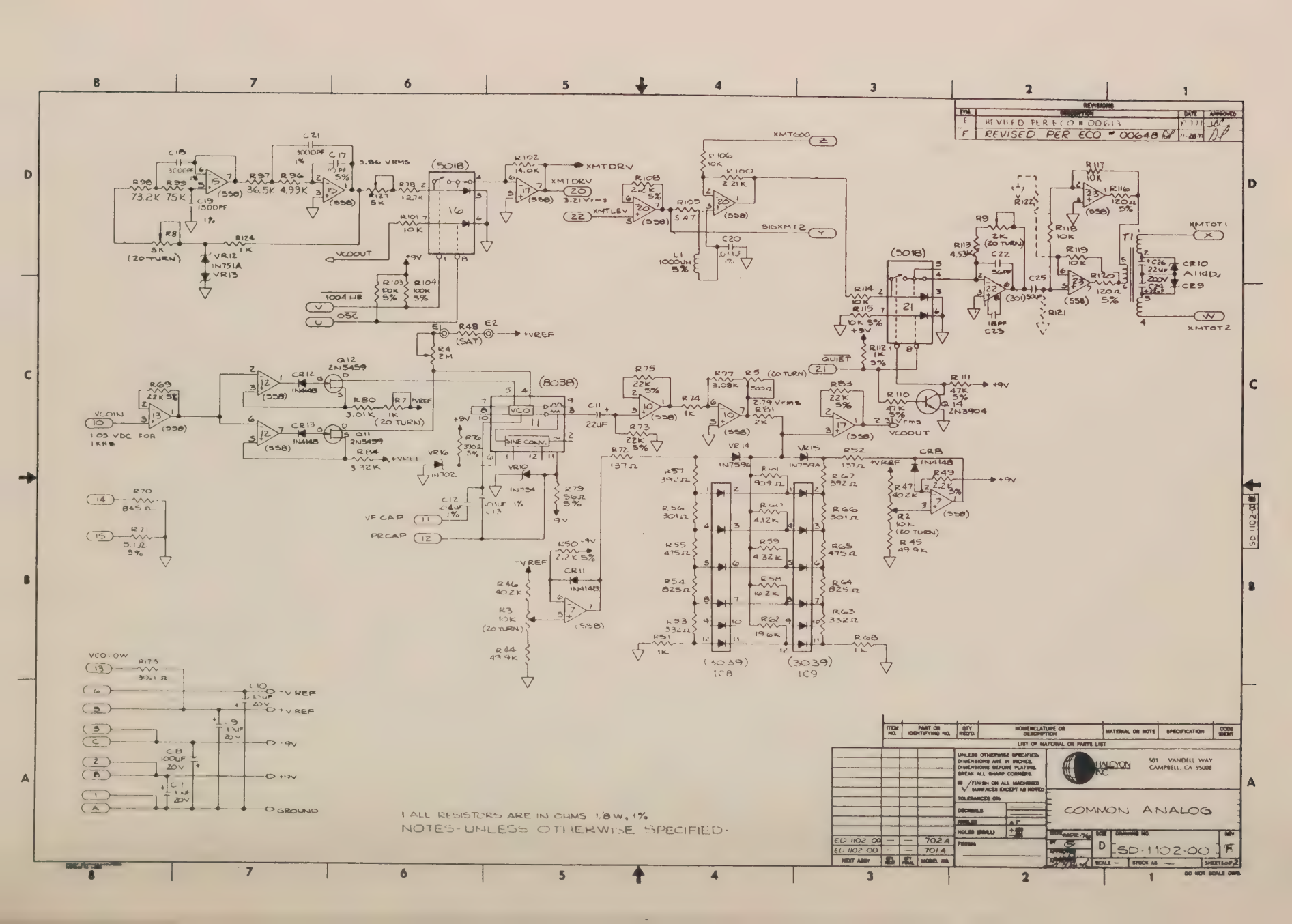
PARENT PART: 8000-1101-00 PCB ASSY-DIGITAL LEVEL UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ENG: E SRCE CODE:A TYPE: 1 ABC: Y PLAN CODE: P DATE: 00-XXX-00

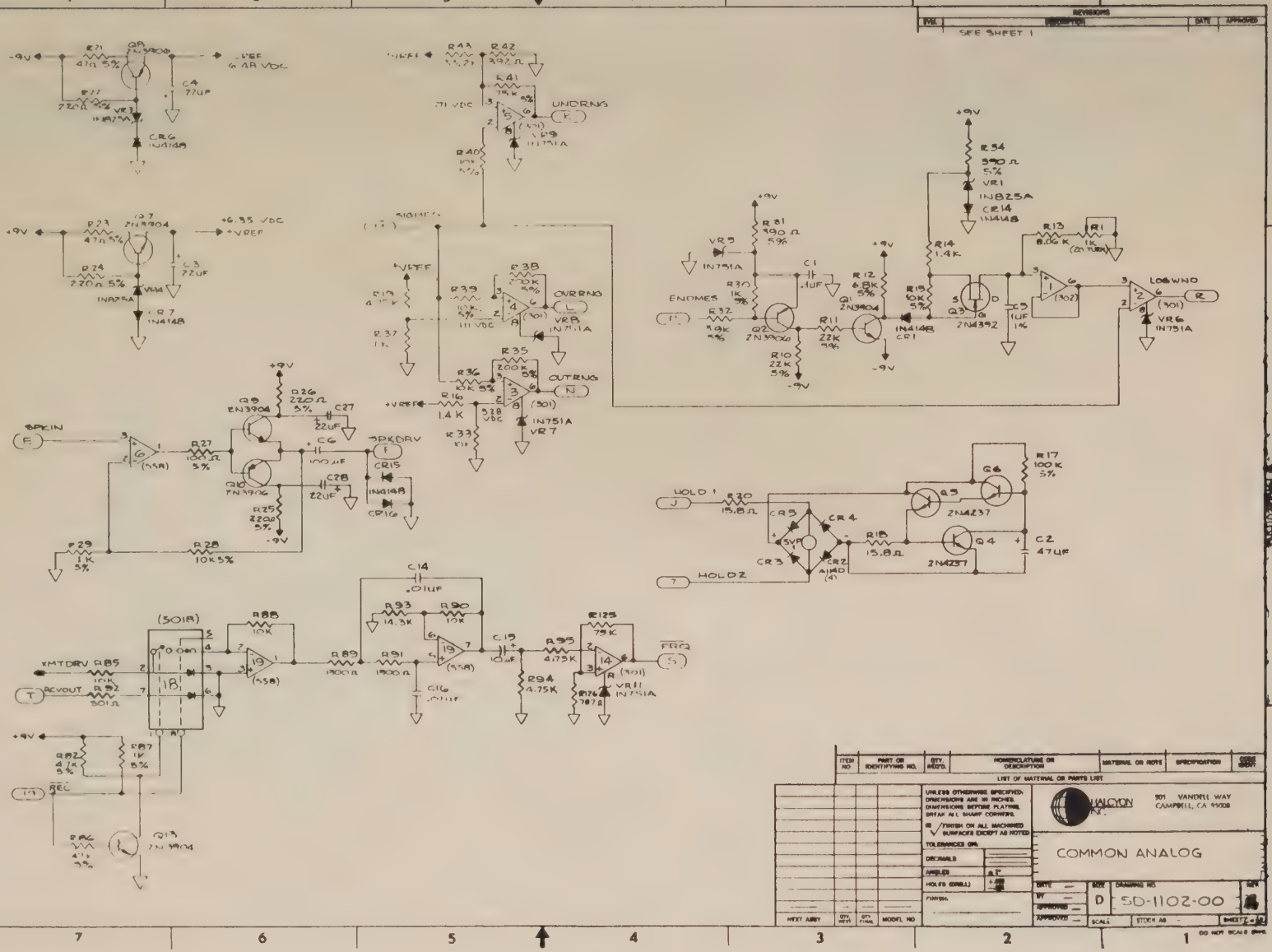
ITEM NO	COMPONENT PARTS	F/R/C	PART DESCRIPTION / REMARKS	PR CD	C E	Y P R	S T A R C	P I N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
110	3132-0010-00		IC-7 NPN TRANSISTOR ARRAY IC29,30,32	P	1			P	EA	3.00					
115	4700-0385-00		R-FXD CC 330 OHM 5% 1/4W R2,11	P	1		C	P	EA	2.00					
120	4700-0421-00		R-FXD CC 10K OHM 5% 1/4W R1,8-10,12	P	1		C	P	EA	5.00					
125	4700-0428-00		R-FXD CC 20K OHM 5% 1/4W R7,15-17	P	1		C	P	EA	4.00		05-MAR-79			
130	4700-0445-00		R-FXD CC 100K OHM 5% 1/4W R3,6	P	1		C	P	EA	2.00					
135	4700-0473-00		R-FXD CC 1.5M OHM 5% 1/4W R4	P	1		C	P	EA	1.00					
140	4700-0479-00		R-FXD CC 2.7M OHM 5% 1/4W R5	P	1		C	P	EA	1.00					
141	4703-0154-00		R-FXD MF 392 OHM 1% 1/8W R14	P	1		C	P	EA	1.00		05-MAR-79			
143	4703-0289-00		R-FXD MF 10.0K OHM 1% 1/8W R13	P	1		C	P	EA	1.00		05-MAR-79			
145	4710-0017-03		R-PAK 8PIN 4 RES RP1-4	P	1		*	P	EA	4.00		05-MAR-79			
150	8800-3904-00		TSTR-NPN ST SM 2N3904 Q1-3,13,14	P	1		C	P	EA	5.00		05-MAR-79			
155	8800-3906-00		TSTR-PNP ST SM 2N3906 Q4-10	P	1		C	P	EA	7.00					
157	8800-5019-00		TSTR-P CHANNEL SW FET Q11	P	1			P	EA	1.00		05-MAR-79			
158	8800-5459-00		TSTR-N-CHNL J-FET 2N5459 Q12	P	1		C	P	EA	1.00		05-MAR-79			
160	8802-4148-00		DIODE-SWITCHING 1N4148 CR1-7	P	1		C	P	EA	7.00		05-MAR-79			

NOTES:

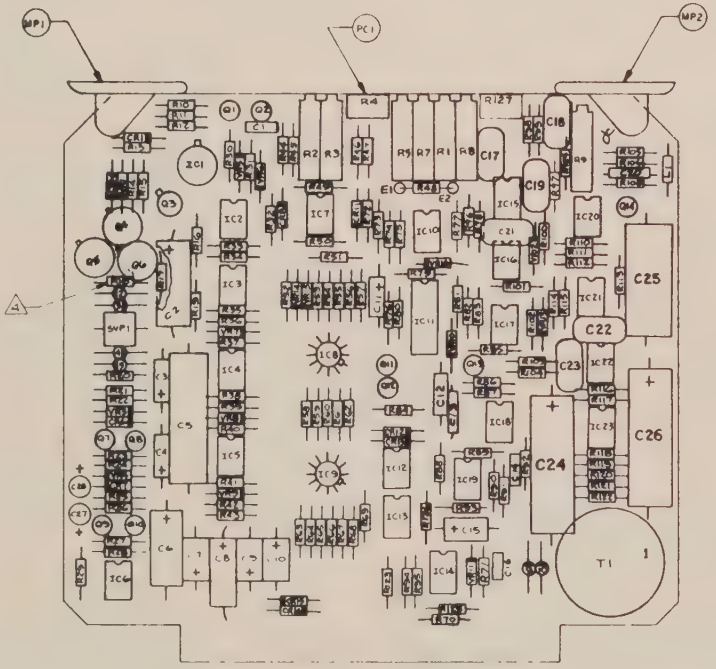
NO RECORDS ON DP1:[1,11]ZBNOS.FMS

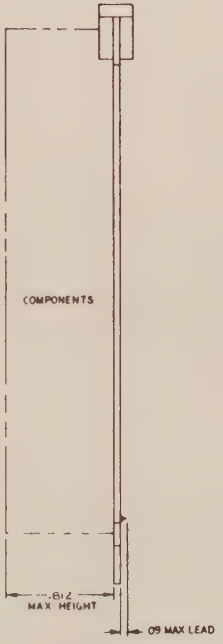
END OF REPORT


REVISED PER ECO # 00613
REVISED PER ECO # 00648
3.86 VRMS
XMTDRV
XMTLEV
SIGXMT2
XMTOT1
XMTOT2
VCOOUT
QUIET
+VREF
-VREF
+9V
-9V
VCOIN
1.09 VDC FOR 1KHz
VF CAP
PRCAP
SINE CONV.
VCO
(5018)
(8038)
(3039)
IC8
IC9
VCO LOW
GROUND
ALL RESISTORS ARE IN OHMS 1/8W, 1%
NOTES-UNLESS OTHERWISE SPECIFIED-
HALCYON INC.
501 VANDELL WAY
CAMPBELL, CA 95008
COMMON ANALOG
SD-1102-00
ECO 1102 00 702A
ECO 1102 00 701A


SEE SHEET 1
COMMON ANALOG
D
SD-1102-00
901 VANDELL WAY
CAMPBELL, CA 95008

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
B	REVISED PER ECO 00463	4-8-77	





4 INSULATE LEADS OF COMP RIB WITH TEFLON TUBING AND INSURE THAT AN AIR GAP (MIN .03) EXIST BETWEEN Q4, Q5, AND Q6. IF NECESSARY, INSULATE WITH SHRINK TUBING.

3. ■ SQUARE PADS DENOTES CATHODE END OF DIODE, POS END OF CAP, EMITTER OF TRANSISTOR OR GATE OF FET
2. FOR LIST OF MATERIALS SEE 8000-1102 00
1. FOR SCHEMATIC SEE SD-1102-00

NOTES - UNLESS OTHERWISE SPECIFIED:

ITEM NO	PART OR IDENTIFYING NO	QTY REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. ▽ /FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS, ANGLES ±1°, HOLES (DRILL) +.005 -.000, FINISH

HALCYON INC. 501 - VANDELL WAY CAMPBELL, CA 95008

PCB ASSEMBLY- COMMON ANALOG

NEXT ASSY	QTY/NEXT	QTY/FINAL	MODEL NO

DATE 8-08-77 BY [illegible] CHECKED [illegible] APPROVED

SIZE D | DRAWING NO ED-1102-00 | REV C

SCALE 2/1 | STOCK AS $000 | SHEET 1 OF 1

DO NOT SCALE DWG

ED-1102 COC

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-00 PCB ASSY COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: H SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S C E	T Y P	S P R	A B C	P I N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1401-0011-00	EJECTOR-PCB MP1,2				P	1		C	P	EA	2.00				
007	1500-0055-00	C-FXD MICA 10PF 5% 500V C17				P	1		C	P	EA	1.00		07-Mar-78		
010	1500-0058-00	C-FXD MICA 18PF 5% 500V C23				P	1		C	P	EA	1.00				
020	1500-0071-00	C-FXD MICA 56PF 5% 500V C22				P	1		C	P	EA	1.00				
025	1500-5202-00	C-FXD MICA 1500PF 1% 30 C19				P	1			P	EA	1.00				
030	1500-5209-00	C-FXD MICA 3000PF 1% 300V C18,21				P	1		C	P	EA	2.00				
035	1501-0062-00	C-FXD CER 10000PF 10% C14,16				P	1		C	P	EA	2.00				
040	1501-0074-00	C-FXD CER .1UF 10% 100V C1				P	1		C	P	EA	1.00				
045	1502-0013-00	C-FXD MET POLY 0.01UF 1% C13				P	1		B	P	EA	1.00				
047	1502-0019-00	C-FXD MET POLY 0.033UF 1% C20				P	1		B	P	EA	1.00		07-Oct-77		
050	1502-0037-00	C-FXD MET POLY 1.0UF 1% C5				P	1		B	P	EA	1.00				
055	1502-0300-07	C-FXD MET POLY 2% .04UF C12				P	1		B	P	EA	1.00		07-Oct-77		
060	1503-0084-00	C-FXD TA 100UF 10% 10WVDC C6				P	1		B	P	EA	1.00				
065	1503-0125-00	C-FXD TA 22UF 10% 15WVDC C3,4,11				P	1		C	P	EA	3.00				
070	1503-0181-00	C-FXD TA 10UF 10% 20WVDC C7,9,10,15				P	1		C	P	EA	4.00				
075	1503-0189-00	C-FXD TA 47UF 10% 20WVDC C2				P	1		B	P	EA	1.00				
080	1503-1125-00	C-FXD TA 22UF 16WVDC C27,28				P	1		B	P	EA	2.00				
085	1504-0044-00	C-FXD AL ELECT 100UF 25V C8				P	1		C	P	EA	1.00				
090	1504-0108-00	C-FXD AL ELECT 32UF 200 C24,26				P	1			P	EA	2.00				
095	1505-0006-00	C-FXD NON POLAR 50UF 15V C25				P	1		C	P	EA	1.00				
100	1700-1102-00	PCB-COMMON ANALOG PC1				P	1			P	EA	1.00				
105	1800-0049-00	COIL-FXD RF 1000UH 5% L1				P	1		B	P	EA	1.00				
110	2101-0000-00	CON-8 PIN IC SCK SKT,2-7,10,12-23				P	1		C	P	EA	19.00				
115	2101-0000-01	CON-14 PIN IC SCK LO PR SKT 11				P	1			P	EA	1.00				
120	3131-0001-01	IC-301 LINEAR OP AMP MINI IC2-5,14,22				P	1		C	P	EA	6.00				

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-00 PCB ASSY COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: H SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	C E	S T Y P	S A B R	P L C	N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
125	3131-0002-00	IC-302 LINEAR OP AMP IC1				P	1	B	P	EA	1.00					
130	3131-0005-00	IC-1458 LINEAR OP AMP DUAL IC2,7,10,12,13,15,17,19,20				P	1	C	P	EA	9.00					
135	3131-0005-01	IC-HI SC CUR DUAL OP AMP IC 23				P	1		P	EA	1.00					
140	3132-0002-00	IC-3039 DIODE ARRAY IC8,9				P	1	B	P	EA	2.00					
145	3132-0003-01	IC-8038 VCO 100PPM/DEG C IC11				P	1	B	P	EA	1.00					
150	3132-0004-03	IC-5018P-CHNL ANALOG SW IC16,18,21				P	1	B	P	EA	3.00					
155	4700-0000-00	R-FXD CC SAT OHM 5% 1/8W R48				P	1		P	EA	1.00					
160	4700-0342-00	R-FXD CC 5.1 OHMS 5% 1/4W R71				P	1		P	EA	1.00					
165	4700-0365-00	R-FXD CC 47 OHM 5% 1/4W R21,23,				P	1	C	P	EA	2.00					
170	4700-0367-00	R-FXD CC 56 OHM 5% 1/4W R79				P	1	C	P	EA	1.00					
175	4700-0373-00	R-FXD CC 100 OHM 5% 1/4W R27				P	1	C	P	EA	1.00					
180	4700-0375-00	R-FXD CC 120 OHM 5% 1/4W R116,120				P	1	C	P	EA	2.00					
185	4700-0381-00	R-FXD CC 220 OHM 5% 1/4W R22,24,25,26				P	1	C	P	EA	4.00					
190	4700-0387-00	R-FXD CC 390 OHM 5% 1/4W R31,34,76				P	1	C	P	EA	3.00					
195	4700-0397-00	R-FXD CC 1000 OHM 5% 1/4W R29,30,87,112				P	1	C	P	EA	4.00					
200	4700-0405-00	R-FXD CC 2200 OHM 5% 1/4W R49,50,108				P	1	C	P	EA	3.00					
205	4700-0411-00	R-FXD CC 3900 OHM 5% 1/4W R32				P	1	C	P	EA	1.00					
210	4700-0417-00	R-FXD CC 6800 OHM 5% 1/4W R12				P	1	C	P	EA	1.00					
215	4700-0421-00	R-FXD CC 10K OHM 5% 1/4W R15,28,36,39,40,115				P	1	C	P	EA	6.00					
220	4700-0429-00	R-FXD CC 22K OHM 5% 1/4W R10,11,69,73,75,83				P	1	C	P	EA	6.00					
225	4700-0437-00	R-FXD CC 47K OHM 5% 1/4W R82,86,110,111				P	1	C	P	EA	4.00					
230	4700-0442-00	R-FXD CC 75K OHM 5%1/4W R41				P	1	C	P	EA	1.00					
235	4700-0445-00	R-FXD CC 100K OHM 5% 1/4W R17,103,104				P	1	C	P	EA	3.00					
240	4700-0452-00	R-FXD CC 200K OHM 5% 1/4W R35,38				P	1	C	P	EA	2.00					
243	4703-0000-00	R-FXD MF SAT OHM 1% 1/8W				P	1		P	EA	1.00		07-Mar-78			

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-00 PCB ASSY COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: H SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S C E	T Y P E	S T R	A B C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
		R105														
245	4703-0020-00	R-FXD MF 15.8 OHM 1% 1/8W			P	1		C	P	EA	2.00					
		R18,20														
250	4703-0047-00	R-FXD MF 30.1 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R 123														
255	4703-0110-00	R-FXD MF 137 OHM 1% 1/8W			P	1		C	P	EA	2.00					
		R52,72														
265	4703-0143-00	R-FXD MF 301 OHM 1% 1/8W			P	1		C	P	EA	3.00					
		R56,66,92														
270	4703-0147-00	R-FXD MF 332 OHM 1% 1/8W			P	1		C	P	EA	2.00					
		R53,63														
275	4703-0154-00	R-FXD MF 392 OHM 1% 1/8W			P	1		C	P	EA	3.00					
		R42,57,67														
280	4703-0162-00	R-FXD MF 475 OHM 1% 1/8W			P	1		C	P	EA	2.00					
		R55,65														
285	4703-0183-00	R-FXD MF 787 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R126														
290	4703-0185-00	R-FXD MF 825 OHM 1% 1/8W			P	1		C	P	EA	2.00					
		R54,64														
295	4703-0186-00	R-FXD MF 845 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R70														
300	4703-0189-00	R-FXD MF 909 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R61														
305	4703-0193-00	R-FXD MF 1000 OHM 1% 1/8W			P	1		C	P	EA	5.00					
		R37,51,68,74,124														
310	4703-0204-00	R-FXD MF 1300 OHM 1% 1/8W			P	1		C	P	EA	2.00					
		R 89, 91														
315	4703-0207-00	R-FXD MF 1400 OHM 1% 1/8W			P	1		C	P	EA	2.00					
		R14,16														
325	4703-0222-00	R-FXD MF 2000 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R81														
330	4703-0226-00	R-FXD MF 2210 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R100														
335	4703-0239-00	R-FXD MF 3010 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R80														
340	4703-0240-00	R-FXD MF 3090 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R 77														
345	4703-0243-00	R-FXD MF 3320 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R84														
350	4703-0252-00	R-FXD MF 4120 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R60														
355	4703-0254-00	R-FXD MF 4320 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R59														
360	4703-0256-00	R-FXD MF 4530 OHM 1% 1/8W			P	1		C	P	EA	1.00					
		R113														
365	4703-0258-00	R-FXD MF 4750 OHM 1% 1/8W			P	1		C	P	EA	3.00					
		R19,94,95														
366	4703-0260-00	R-FXD MF 4990 OHM 1% 1/8W			P	1		C	P	EA	1.00		07-Mar-78			
		R96														
370	4703-0280-00	R-FXD MF 8060 OHM 1% 1/8W			P	1		C	P	EA	1.00					

S I N G L E L E V E L B I L L S O F M A T E R I A L

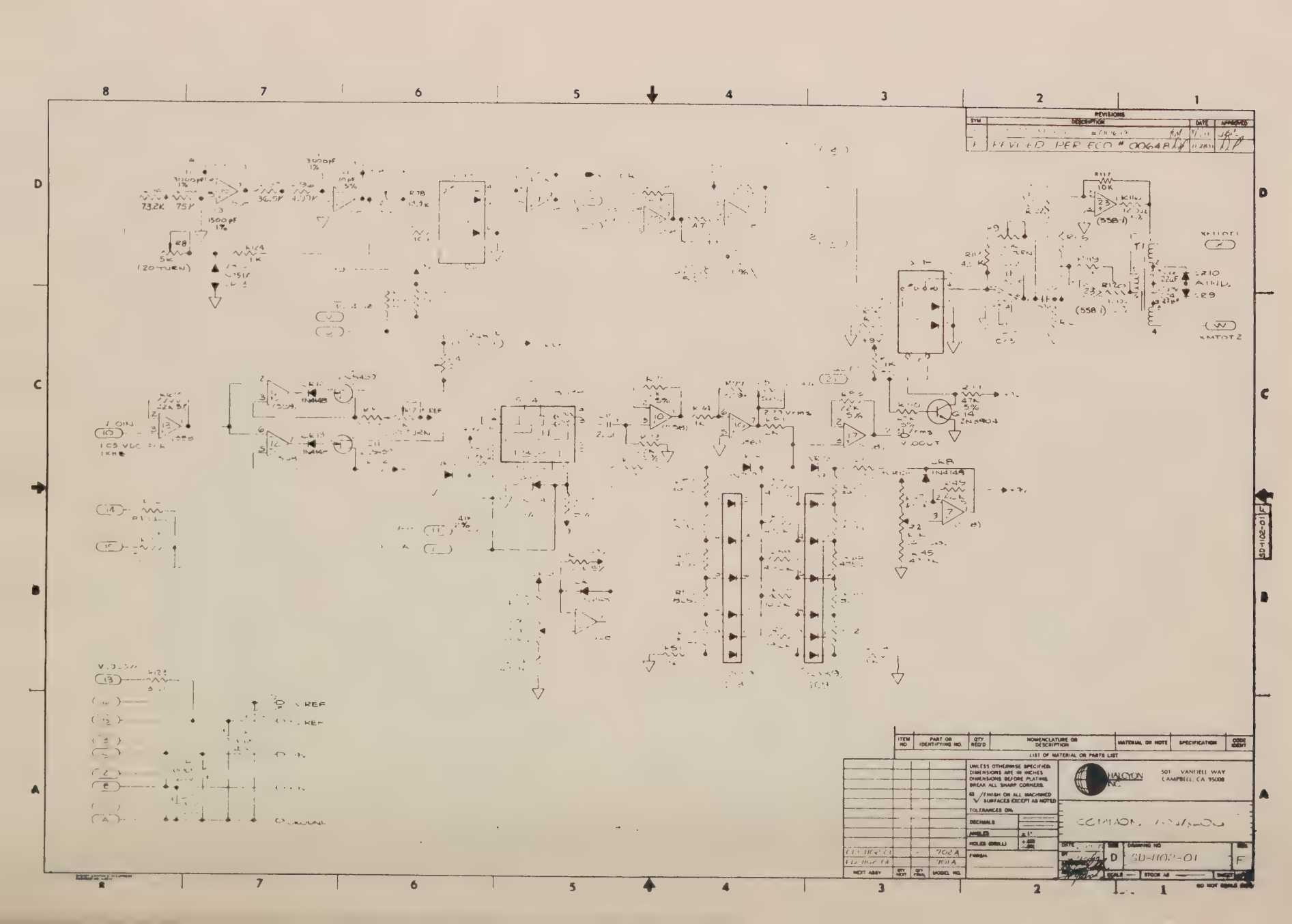
PARENT PART: 8000-1102-00 PCB ASSY COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: H SRCE CODE: A DATE: 00-XXX-00

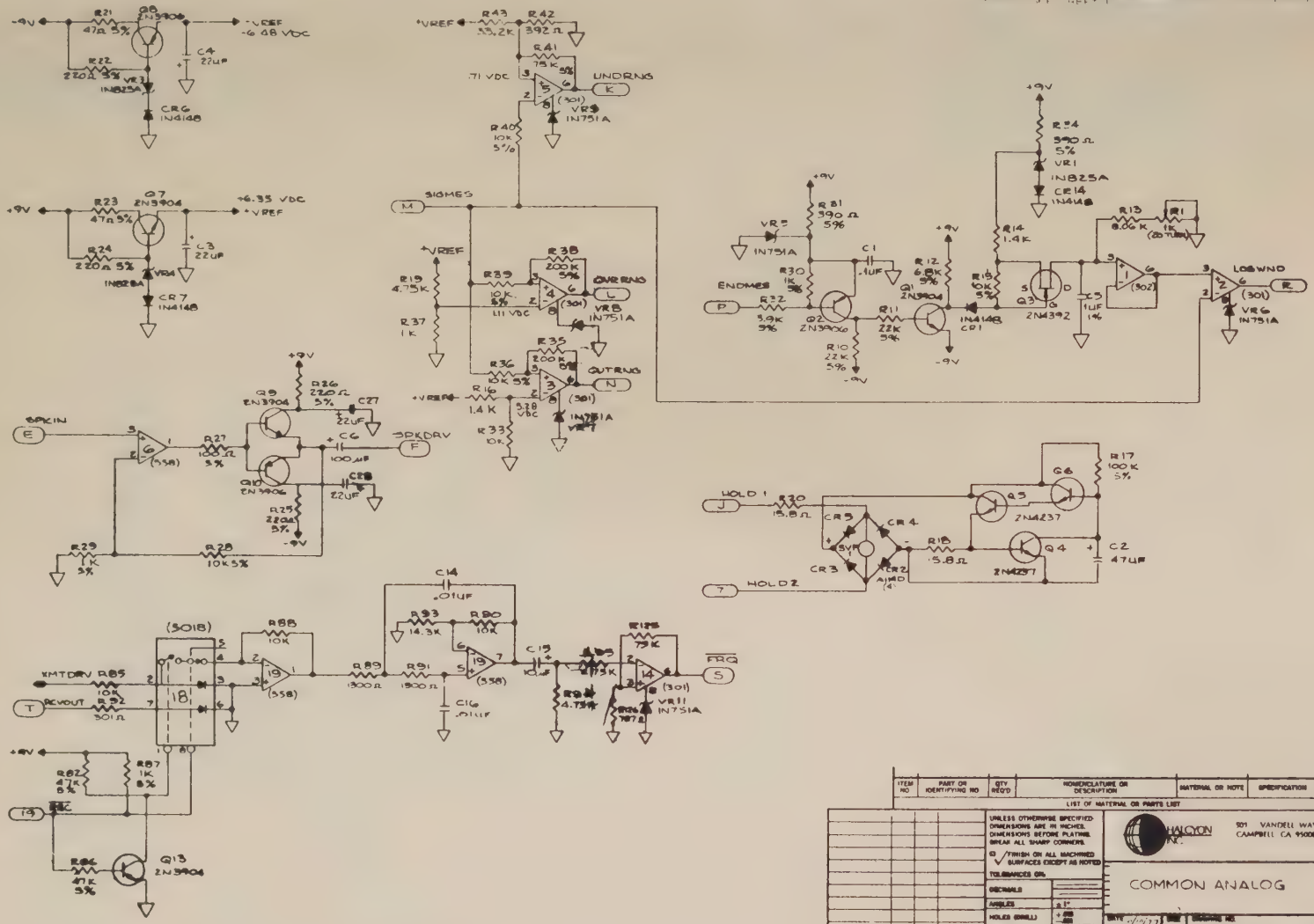
ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	C E	T Y P	S P R	A B C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
		R13														
375	4703-0289-00	R-FXD MF 10.0K OHM 1% 1/8W				P	1		C	P	EA	10.00				
		R33,85,88,90,101, 106,114,117-119														
380	4703-0299-00	R-FXD MF 12.7K OHM 1% 1/8W				P	1		C	P	EA	1.00				
		R78														
385	4703-0303-00	R-FXD MF 14.0K OHM 1% 1/8W				P	1		C	P	EA	1.00				
		R102														
390	4703-0304-00	R-FXD MF 14.3K OHM 1% 1/8W				P	1		C	P	EA	1.00				
		R93														
395	4703-0309-00	R-FXD MF 16.2K OHM 1% 1/8W				P	1		C	P	EA	1.00				
		R58														
400	4703-0317-00	R-FXD MF 19.6K OHM 1% 1/8W				P	1		C	P	EA	1.00				
		R62														
405	4703-0339-00	R-FXD MF 33.2K OHM 1% 1/8W				P	1		C	P	EA	1.00				
		R43														
411	4703-0343-00	R-FXD MF 36.5K OHM 1% 1/8W				P	1		C	P	EA	1.00		07-Mar-78		
		R97														
415	4703-0347-00	R-FXD MF 40.2K OHM 1% 1/8W				P	1		C	P	EA	2.00				
		R46,47														
420	4703-0356-00	R-FXD MF 49.9K OHM 1% 1/8W				P	1		C	P	EA	2.00				
		R44,45														
430	4703-0372-00	R-FXD MF 73.2K OHM 1% 1/8W				P	1		C	P	EA	1.00		07-Mar-78		
		R98														
435	4703-0373-00	R-FXD MF 75.0K OHM 1% 1/8W				P	1		C	P	EA	2.00		07-Mar-78		
		R99,125														
440	4750-0009-00	R-VAR SGNL TURN 5K OHM				P	1		C	P	EA	1.00				
		R 127														
445	4750-0019-00	R-VAR SINGLE TURN 2M OHM 10%				P	1		P	P	EA	1.00				
		R4														
450	4750-0026-00	R-VAR 20 TURN 500 OHM				P	1		B	P	EA	1.00				
		R5														
455	4750-0027-00	R-VAR 20 TURN 1K OHM				P	1		B	P	EA	2.00				
		R1,7														
460	4750-0028-00	R-VAR 20 TURN 2K OHM				P	1		B	P	EA	1.00				
		R9														
465	4750-0029-00	R-VAR 20 TURN 5K OHM				P	1		B	P	EA	1.00				
		R8														
470	4750-0030-00	R-VAR 20 TURN 10K OHM				P	1		B	P	EA	2.00				
		R2,3														
475	4800-3904-00	TSTR-NPN SI SM 2N3904				P	1		C	P	EA	5.00				
		Q1,7,9,13,14,														
480	4800-3906-00	TSTR-PNP SI SM 2N3906				P	1		C	P	EA	3.00				
		Q2,8,10														
485	4800-4237-00	TSTR-NPN SI AF 5 W 2N4237				P	1		B	P	EA	3.00				
		Q4,5,6														
490	4800-4392-00	TSTR-N-CHNL J-FET 2N4392				P	1		C	P	EA	1.00				
		Q3														
495	4800-5459-00	TSTR-N-CHNL J-FET 2N5459				P	1		C	P	EA	2.00				
		Q11,12														

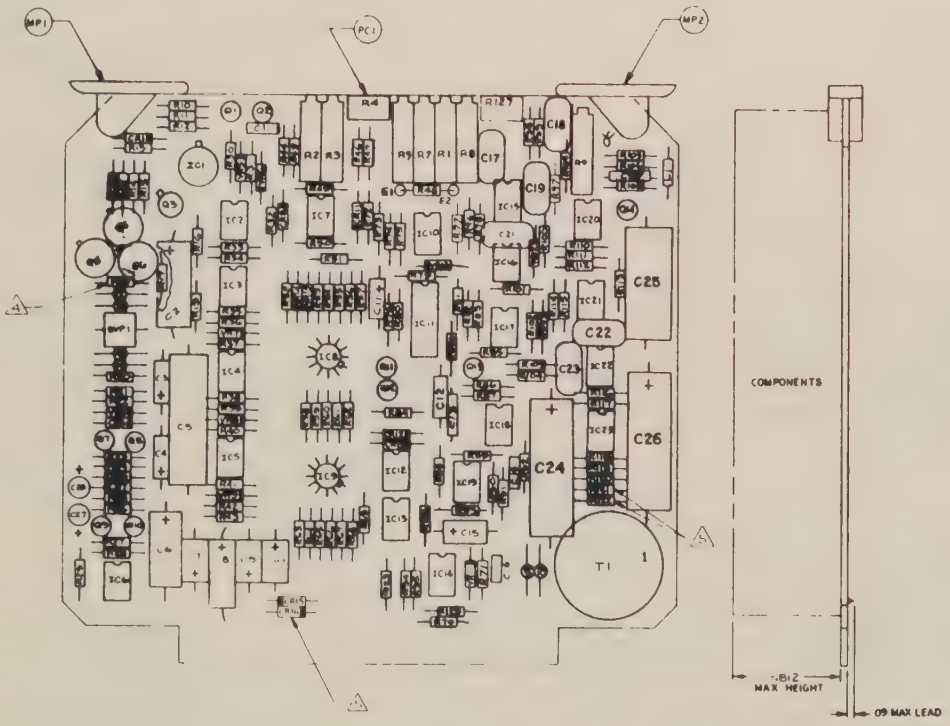
S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-00 PCB ASSY COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: H SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S C E	T Y P	S P R	A R C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
500	4802-0702-00	DIODE-ZENER 2.9V 1N702A VR16				P	1		C	P	EA	1.00				
505	4802-0751-00	DIODE-ZENER 5.1V 1N751A VR5-9,11-13				P	1		C	P	EA	8.00				
510	4802-0754-00	DIODE-ZENER 6.8V 1N754A VR 10				P	1		C	P	EA	1.00				
515	4802-0759-00	DIODE-ZENER 12V 1N759A VR14,15				P	1		C	P	EA	2.00				
520	4802-0825-00	DIODE-REF 6.2V 1N825A VR1,3,4				P	1		C	P	EA	3.00				
525	4802-4148-00	DIODE-SWITCHING 1N4148 CR1,6-8,11-16				P	1		C	P	EA	10.00				
530	4803-0001-00	DIODE-RECT 1A 300V CR2-5,9,10				P	1		C	P	EA	6.00				
535	5600-0005-01	XFORMER-SIGNAL OUT 20K T1				P	1			P	EA	1.00				
540	5700-0003-00	TUBE-SURGE VOLT PROT 5 AMP SVP1				P	1			P	EA	1.00				


REVISIONS
REVISED PER ECO # 0064
LIST OF MATERIAL OR PARTS LIST
HALCYON INC.
501 VANDELL WAY
CAMPBELL, CA 95008
SD-1102-01
702A
702A
+5 VDC OUT
-5 VDC OUT
+5 REF
-5 REF
+15 VDC IN
-15 VDC IN
COMMON


-9V
R21 47Ω 5%
Q8 2N3906
-VREF -6.48 VDC
C4 22UF
R22 220Ω 5%
VR3 IN825A
CR6 IN4148
+9V
R23 47Ω 5%
Q7 2N3904
+6.35 VDC +VREF
C3 22UF
R24 220Ω 5%
VR4 IN825A
CR7 IN4148
+VREF
R43 33.2K
R42 392Ω
R41 7.5K 5%
.71 VDC
UNDRNG
K
(301)
VR9 IN751A
R40 10K 5%
SIGMES
M
R19 4.75K
R37 1K
R38 200K 5%
R39 10K 5%
OVRRNG
L
VR8 IN751A
R35 200K 5%
R36 10K 5%
R16 1.4K
R33 10K
OUTRNG
N
VR10 IN751A
+9V
R34 390Ω 5% VR1 IN825A
CR14 IN4148
VR5 IN751A
R81 390Ω 5%
C1 .1UF
R14 1.4K
R13 8.06K
R1 1K (20 TURN)
ENDMES
P
R30 1K 5%
R32 5.9K 5%
Q2 2N3906
R10 22K 5%
R12 6.8K 5%
Q1 2N3904
R11 22K 5%
IN4148 CR1
Q3 2N3921
C5 .1UF 1%
(302)
LOSWND
R
(301)
VR6 IN751A
E
SPKIN
(558)
R27 100Ω 5%
Q9 2N3904
Q10 2N3906
R26 220Ω 5%
C27 22UF
C6 100 MF
C28 22UF
R25 220Ω 5%
SPKDRV
F
R29 1K 5%
R28 10K 5%
HOLD 1
J
330 15.8Ω
CR5
CR4
CR3
CR2 AIMD (4)
R18 5.8Ω
Q5 2N4237
Q4 2N4237
C2 47UF
G6
R17 100K 5%
HOLD 2
T
C14 .01UF
R33 14.3K
R80 10K
C13
R89 1800Ω
R91 1800Ω
C16 .01UF
R88 10K
(5018)
XMTDRV R85 10K
RCVOUT R92 301Ω
18
80
R82 47K 5%
R87 1K 5%
R84 47K 5%
Q13 2N3904
R128 75K
R129 4.75K
R124 107Ω
VR11 IN751A
FRQ
S
REVISIONS
ITEM NO | PART OR IDENTIFYING NO | QTY REQ'D | NOMENCLATURE OR DESCRIPTION | MATERIAL OR NOTE | SPECIFICATION | CODE IDENT
LIST OF MATERIAL OR PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.
FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON:
DECIMALS
ANGLES ±1°
HOLES (DRILL) +.005 -.000
FINISH
NEXT ASSY | QTY NEXT | QTY / MAC | MODEL NO
HALCYON INC.
201 VANDELL WAY CAMPBELL CA 95008
COMMON ANALOG
SIZE D | DRAWING NO. 1.D-1102-01 | REV F
SCALE | STOCK AS | SHEET 1 OF 2
DO NOT SCALE DRAWING
90-102-01F



REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE PER ECN #00538	9/6/83	WE

⚠5 DO NOT LOAD.

⚠4 INSULATE LEADS OF COMP RIB WITH TEFLON TUBING AND INSURE THAT AN AIR GAP (MIN .03) EXIST BETWEEN Q4, Q5, AND Q6. IF NECESSARY, INSULATE WITH SHRINK TUBING.

3. ⊞ SQUARE PADS DENOTES CATHODE END OF DIODE, POS END OF CAP, EMITTER OF TRANSISTOR OR GATE OF FET
2. FOR LIST OF MATERIALS SEE 8000-1102-01
1. FOR SCHEMATIC SEE 80-1102-01

NOTES: UNLESS OTHERWISE SPECIFIED

ITEM NO	PART OR IDENTIFYING NO	QTY REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DIMENSIONS BEFORE PLATING
BREAK ALL SHARP CORNERS
63 /FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON
DECIMALS
ANGLES ±1°
HOLES (DRILL) ±.005 .004
FINISH

HALCYON INC.

PCB ASSEMBLY-
COMMON ANALOG

DATE	SIZE	DRAWING NO	REV
BY	D	ED 1102-01	A

SCALE 2/1 STOCK AS 8000 SHEET 1 OF 1

DO NOT SCALE DRG

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-01 COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: F SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV	PR CD	S C	T Y	S P	A R	P L	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1401-0011-00	EJECTOR-PCB MP1,2			P	1		C	P	EA	2.00					
008	1500-0055-00	C-FXD MICA 10PF 5% 500V C17			P	1		C	P	EA	1.00		07-Mar-78			
010	1500-0058-00	C-FXD MICA 18PF 5% 500V C23			P	1		C	P	EA	1.00					
020	1500-0071-00	C-FXD MICA 56PF 5% 500V C22			P	1		C	P	EA	1.00					
025	1500-5202-00	C-FXD MICA 1500PF 1% 30 C19			P	1			P	EA	1.00					
030	1500-5209-00	C-FXD MICA 3000PF 1% 300V C18,21			P	1		C	P	EA	2.00					
035	1501-0062-00	C-FXD CER 10000PF 10% C14,16			P	1		C	P	EA	2.00					
040	1501-0074-00	C-FXD CER .1UF 10% 100V C1			P	1		C	P	EA	1.00					
045	1502-0013-00	C-FXD MET POLY 0.01UF 1% C13			P	1		B	P	EA	1.00					
047	1502-0019-00	C-FXD MET POLY 0.033UF 1% C20			P	1		B	P	EA	1.00		07-Oct-77			
050	1502-0037-00	C-FXD MET POLY 1.0UF 1% C5			P	1		B	P	EA	1.00					
055	1502-0300-07	C-FXD MET POLY 2% .04UF C12			P	1		B	P	EA	1.00		07-Oct-77			
060	1503-0084-00	C-FXD TA 100UF 10% 10WVDC C6			P	1		B	P	EA	1.00					
065	1503-0125-00	C-FXD TA 22UF 10% 15WVDC C3,4,11			P	1		C	P	EA	3.00					
070	1503-0181-00	C-FXD TA 10UF 10% 20WVDC C7,9,10,15			P	1		C	P	EA	4.00					
075	1503-0189-00	C-FXD TA 47UF 10% 20WVDC C2			P	1		B	P	EA	1.00					
080	1503-1125-00	C-FXD TA 22UF 16WVDC C27,28			P	1		B	P	EA	2.00					
085	1504-0044-00	C-FXD AL ELECT 100UF 25V C8			P	1		C	P	EA	1.00					
090	1504-0108-00	C-FXD AL ELECT 22UF 200 C24,26			P	1			P	EA	2.00					
095	1505-0006-00	C-FXD NON POLAR 50UF 15V C25			P	1		C	P	EA	1.00					
100	1700-1102-00	PCB-COMMON ANALOG PC1			P	1			P	EA	1.00					
105	1800-0049-00	COIL-FXD RF 1000UH 5% L1			P	1		B	P	EA	1.00					
110	2101-0000-00	CON-8 PIN IC SCK SKT, 2-7,10,12-23			P	1		C	P	EA	19.00					
115	2101-0000-01	CON-14 PIN IC SCK LO PR SKT, 11			P	1			P	EA	1.00					
120	3131-0001-01	IC-301 LINEAR OP AMP MINI IC2-5,14,22			P	1		C	P	EA	6.00					

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-01 COMMON ANALOG UM: EA ERC: F PROD CODE: SRCE CODE: A ECN: DATE: 00-XXX-00 ASSEMBLY QTY: 1

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S T C Y E P	S R	A P B L C N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
125	3131-0002-00	IC-302 LINEAR OP AMP IC1			P 1		B P	EA	1.00					
130	3131-0005-00	IC-1458 LINEAR OP AMP DUAL IC6,7,10,12,13,15, 17,19,20			P 1		C P	EA	9.00					
135	3131-0005-01	IC-HI SC CUR DUAL OP AMP IC23			P 1		P	EA	1.00					
140	3132-0002-00	IC-3039 DIODE ARRAY IC8,9			P 1		B P	EA	2.00					
145	3132-0003-01	IC-8038 VCO 100PPM/DEG C IC11			P 1		B P	EA	1.00					
150	3132-0004-03	IC-5018P-CHNL ANALOG SW IC16,18,21			P 1		B P	EA	3.00					
155	4700-0000-00	R-FXD CC SAT OHM 5% 1/8W R48			P 1		P	EA	1.00					
160	4700-0342-00	R-FXD CC 5.1 OHMS 5% 1/4W R71			P 1		P	EA	1.00					
165	4700-0365-00	R-FXD CC 47 OHM 5% 1/4W R21,23			P 1		C P	EA	2.00					
170	4700-0367-00	R-FXD CC 56 OHM 5% 1/4W R79			P 1		C P	EA	1.00					
175	4700-0373-00	R-FXD CC 100 OHM 5% 1/4W R37			P 1		C P	EA	1.00					
180	4700-0375-00	R-FXD CC 120 OHM 5% 1/4W R116,120			P 1		C P	EA	2.00					
185	4700-0381-00	R-FXD CC 220 OHM 5% 1/4W R22,24,25,26			P 1		C P	EA	4.00					
190	4700-0387-00	R-FXD CC 390 OHM 5% 1/4W R31,34,76			P 1		C P	EA	3.00					
195	4700-0397-00	R-FXD CC 1000 OHM 5% 1/4W R29,30,87,112			P 1		C P	EA	4.00					
200	4700-0405-00	R-FXD CC 2200 OHM 5% 1/4W R49,50,108			P 1		C P	EA	3.00					
205	4700-0411-00	R-FXD CC 3900 OHM 5% 1/4W R32			P 1		C P	EA	1.00					
210	4700-0417-00	R-FXD CC 6800 OHM 5% 1/4W R12			P 1		C P	EA	1.00					
215	4700-0421-00	R-FXD CC 10K OHM 5% 1/4W R15,28,36,39,40,115			P 1		C P	EA	6.00					
220	4700-0429-00	R-FXD CC 22K OHM 5% 1/4W R10,11,69,73,75,83			P 1		C P	EA	6.00					
225	4700-0437-00	R-FXD CC 47K OHM 5% 1/4W R82,86,110,111			P 1		C P	EA	4.00					
230	4700-0442-00	R-FXD CC 75K OHM 5%1/4W R41			P 1		C P	EA	1.00					
235	4700-0445-00	R-FXD CC 100K OHM 5% 1/4W R17,103,104			P 1		C P	EA	3.00					
240	4700-0452-00	R-FXD CC 200K OHM 5% 1/4W R35,38			P 1		C P	EA	2.00					
243	4703-0000-00	R-FXD MF SAT OHM 1% 1/8W			P 1		P	EA	1.00		07-Mar-78			

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-01 COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: F SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	STY E	SPR P	SAR C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
		R105													
245	4703-0020-00	R-FXD MF 15.8 OHM 1% 1/8W			P	1	C	P	EA	2.00					
		R18,20													
250	4703-0047-00	R-FXD MF 30.1 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R123													
255	4703-0110-00	R-FXD MF 137 OHM 1% 1/8W			P	1	C	P	EA	2.00					
		R52,72													
265	4703-0143-00	R-FXD MF 301 OHM 1% 1/8W			P	1	C	P	EA	3.00					
		R56,66,93													
270	4703-0147-00	R-FXD MF 332 OHM 1% 1/8W			P	1	C	P	EA	2.00					
		R53,63													
275	4703-0154-00	R-FXD MF 392 OHM 1% 1/8W			P	1	C	P	EA	3.00					
		R43,57,67													
280	4703-0162-00	R-FXD MF 475 OHM 1% 1/8W			P	1	C	P	EA	2.00					
		R55,65													
285	4703-0183-00	R-FXD MF 787 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R126													
290	4703-0185-00	R-FXD MF 825 OHM 1% 1/8W			P	1	C	P	EA	2.00					
		R54,64													
295	4703-0186-00	R-FXD MF 845 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R70													
300	4703-0189-00	R-FXD MF 909 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R61													
305	4703-0193-00	R-FXD MF 1000 OHM 1% 1/8W			P	1	C	P	EA	5.00					
		R37,51,68,74,124													
310	4703-0204-00	R-FXD MF 1300 OHM 1% 1/8W			P	1	C	P	EA	2.00					
		R89,91													
315	4703-0207-00	R-FXD MF 1400 OHM 1% 1/8W			P	1	C	P	EA	2.00					
		R14,16													
325	4703-0222-00	R-FXD MF 2000 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R81													
330	4703-0226-00	R-FXD MF 2210 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R100													
335	4703-0239-00	R-FXD MF 3010 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R80													
340	4703-0240-00	R-FXD MF 3090 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R77													
345	4703-0243-00	R-FXD MF 3320 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R84													
350	4703-0252-00	R-FXD MF 4120 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R60													
355	4703-0254-00	R-FXD MF 4320 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R59													
360	4703-0256-00	R-FXD MF 4530 OHM 1% 1/8W			P	1	C	P	EA	1.00					
		R113													
365	4703-0258-00	R-FXD MF 4750 OHM 1% 1/8W			P	1	C	P	EA	3.00					
		R19,94,95													
366	4703-0260-00	R-FXD MF 4990 OHM 1% 1/8W			P	1	C	P	EA	1.00		07-Mar-78			
		R96													
370	4703-0280-00	R-FXD MF 8060 OHM 1% 1/8W			P	1	C	P	EA	1.00					

SINGLE LEVEL BILLS OF MATERIAL

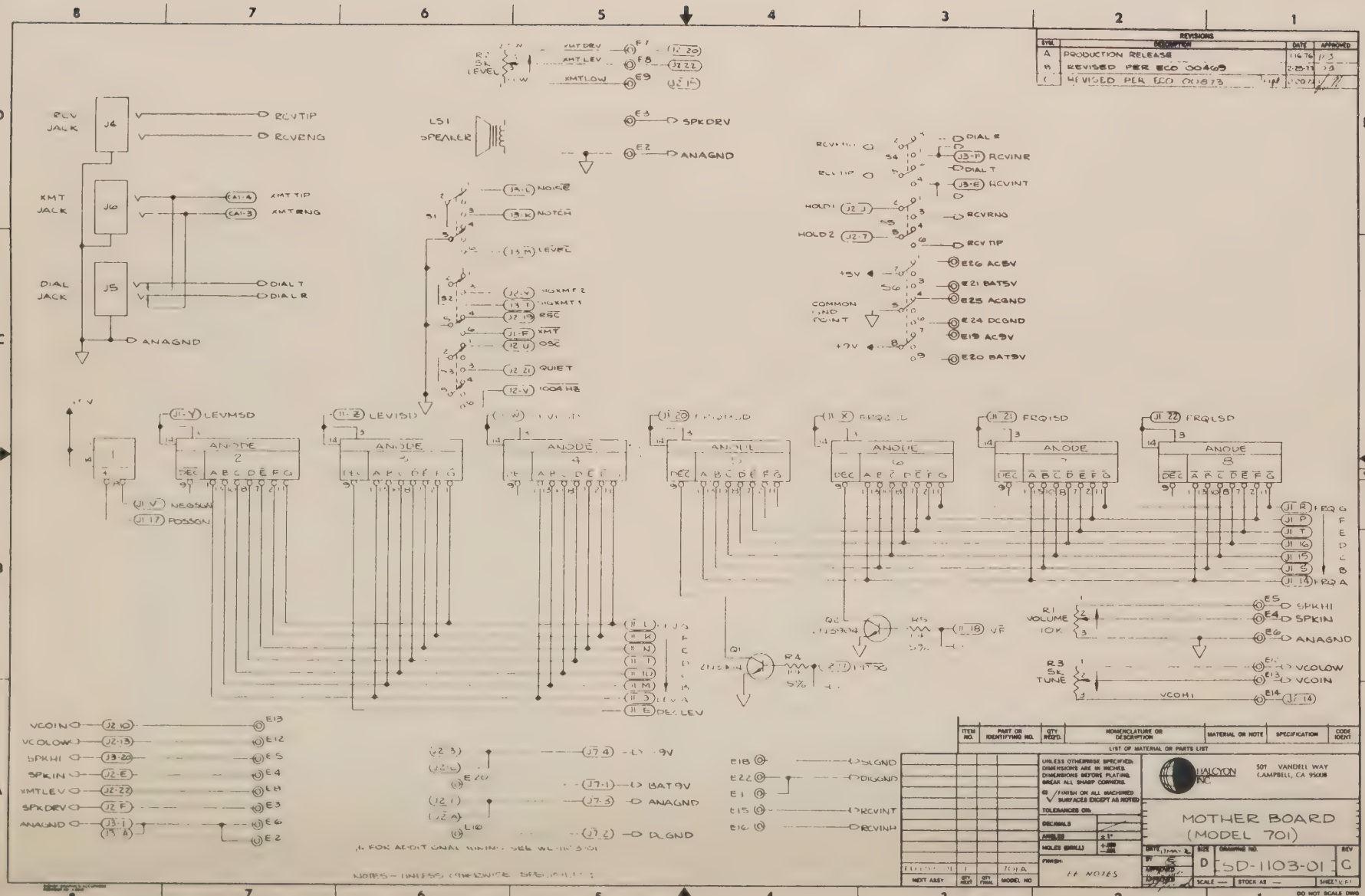
PARENT PART: 8000-1102-01 COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: F SRCE CODE: A DATE: 00-XXX-00

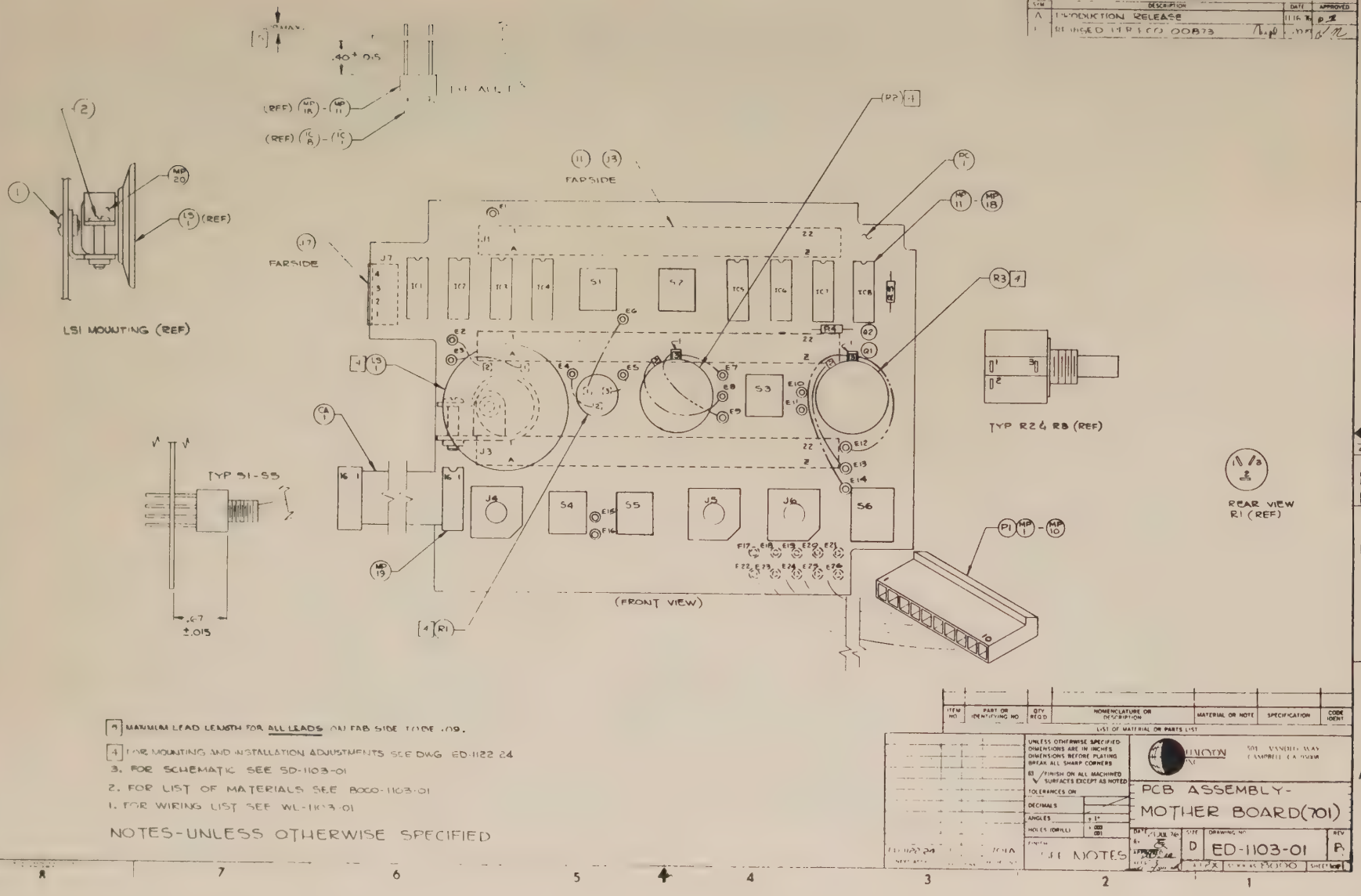
ITEM NO.	COMPONENT PARTS	PART DESCRIPTION	REMARKS	EDT REV CD	PR CD	C E	S T Y P	S A P R	P B L C	N UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
375	4703-0289-00	R-FXD MF 10.0K OHM 1% 1/8W	R13				P	1	C	P EA	10.00					
380	4703-0299-00	R-FXD MF 12.7K OHM 1% 1/8W	R33,85,88,90,101,106,114,117-119				P	1	C	P EA	1.00					
385	4703-0303-00	R-FXD MF 14.0K OHM 1% 1/8W	R78				P	1	C	P EA	1.00					
390	4703-0304-00	R-FXD MF 14.3K OHM 1% 1/8W	R102				P	1	C	P EA	1.00					
395	4703-0309-00	R-FXD MF 16.2K OHM 1% 1/8W	R93				P	1	C	P EA	1.00					
400	4703-0317-00	R-FXD MF 19.6K OHM 1% 1/8W	R58				P	1	C	P EA	1.00					
405	4703-0339-00	R-FXD MF 33.2K OHM 1% 1/8W	R62				P	1	C	P EA	1.00					
411	4703-0343-00	R-FXD MF 36.5K OHM 1% 1/8W	R43				P	1	C	P EA	1.00		07-Mar-78			
415	4703-0347-00	R-FXD MF 40.2K OHM 1% 1/8W	R97				P	1	C	P EA	2.00					
420	4703-0356-00	R-FXD MF 49.9K OHM 1% 1/8W	R46,47				P	1	C	P EA	2.00					
430	4703-0372-00	R-FXD MF 73.2K OHM 1% 1/8W	R44,45				P	1	C	P EA	1.00		07-Mar-78			
435	4703-0373-00	R-FXD MF 75.0K OHM 1% 1/8W	R98				P	1	C	P EA	2.00		07-Mar-78			
440	4750-0009-00	R-VAR SGNL TURN 5K OHM	R99,125				P	1	C	P EA	1.00					
445	4750-0019-00	R-VAR SINGLE TURN 2M OHM 10%	R127				P	1		P EA	1.00					
450	4750-0026-00	R-VAR 20 TURN 500 OHM	R4				P	1	B	P EA	1.00					
455	4750-0027-00	R-VAR 20 TURN 1K OHM	R5				P	1	B	P EA	2.00					
460	4750-0028-00	R-VAR 20 TURN 2K OHM	R1,7				P	1	B	P EA	1.00					
465	4750-0029-00	R-VAR 20 TURN 5K OHM	R9				P	1	B	P EA	1.00					
470	4750-0030-00	R-VAR 20 TURN 10K OHM	R8				P	1	B	P EA	2.00					
475	4800-3904-00	TSTR-NPN SI SM 2N3904	R2,3				P	1	C	P EA	5.00					
480	4800-3906-00	TSTR-PNP SI SM 2N3906	Q1,7,9,13,14				P	1	C	P EA	3.00					
485	4800-4237-00	TSTR-NPN SI AF 5 W 2N4237	Q2,8,10				P	1	B	P EA	3.00					
490	4800-4392-00	TSTR-N-CHNL J FET 2N4392	Q4,5,6				P	1	C	P EA	1.00					
495	4800-5459-00	TSTR-N-CHNL J-FET 2N5459	Q3				P	1	C	P EA	2.00					
			Q11,12													

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8000-1102-01 COMMON ANALOG UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: F SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S C E	T Y P	S P R	A R C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
500	4802-0702-00	DIODE-ZENER 2.9V 1N702A VR16				P	1	C	P	EA	1.00					
505	4802-0751-00	DIODE-ZENER 5.1V 1N751A VR5-9,11-13				P	1	C	P	EA	8.00					
510	4802-0754-00	DIODE-ZENER 6.8V 1N754A VR10				P	1		P	EA	1.00					
515	4802-0759-00	DIODE-ZENER 12V 1N759A VR14,15				P	1	C	P	EA	2.00					
520	4802-0825-00	DIODE-REF 6.2V 1N825A VR1,3,4				P	1	C	P	EA	3.00					
525	4802-4148-00	DIODE-SWITCHING 1N4148 CR1,6-8,11-14				P	1	C	P	EA	8.00					
530	4803-0001-00	DIODE-RECT 1A 300V CR2-5,9,10				P	1	C	P	EA	6.00					
535	5600-0005-01	XFORMER-SIGNAL OUT 20K T1				P	1		P	EA	1.00					
540	5700-0003-00	TUBE-SURGE VOLT PROT 5 AMP SUP1				P	1		P	EA	1.00					


REVISIONS
A PRODUCTION RELEASE 11676
B REVISED PER ECO 004609 2-28-77
C REVISED PER ECO 00873
RCV JACK J4
RCVTIP
RCVRNG
XMT JACK J60
XMT TIP
XMT RNG
DIAL JACK J5
DIAL T
DIAL R
ANAGND
LS1 SPEAKER
SPKDRV
ANAGND
NOISE
NOTCH
LEVEL
XMT
OSC
QUIET
1004 HZ
DIAL R
RCVINR
DIAL T
RCVINT
RCVRNG
RCV TIP
+5V
+9V
COMMON GND POINT
ACBV
BAT5V
ACGND
DCGND
AC9V
BAT9V
LEVMSD
LEVISD
FRQMSD
FRQISD
FRQLSD
ANODE
NEGSW
POSSW
VF
SPKHI
SPKIN
ANAGND
VCOLOW
VCOIN
VCOHI
DEC LEV
VCOIN
VCOLOW
SPKHI
SPKIN
XMTLEV
SPKDRV
ANAGND
-9V
BAT9V
ANAGND
DLGND
SLGND
DIGGND
RCVINT
RCVINR
MOTHER BOARD
(MODEL 701)
HALCYON INC
501 VANDELL WAY
CAMPBELL, CA 95008
SD-1103-01
SCALE —
SHEET 1 OF 1
DO NOT SCALE DWG
NOTES – UNLESS OTHERWISE SPECIFIED :


REVISIONS
DESCRIPTION
DATE
APPROVED
PRODUCTION RELEASE
REVISED PER ECO 00873
LSI MOUNTING (REF)
FARSIDE
FARSIDE
(FRONT VIEW)
TYP S1-S5
TYP R2 & R3 (REF)
REAR VIEW
R1 (REF)
.40 ± 0.5
ALL
.67
±.015
MAXIMUM LEAD LENGTH FOR ALL LEADS ON FAB SIDE TO BE .109.
FOR MOUNTING AND INSTALLATION ADJUSTMENTS SEE DWG ED-1122-24
3. FOR SCHEMATIC SEE SD-1103-01
2. FOR LIST OF MATERIALS SEE BOOO-1103-01
1. FOR WIRING LIST SEE WL-1103-01
NOTES-UNLESS OTHERWISE SPECIFIED
ITEM NO
PART OR IDENTIFYING NO
QTY REQ'D
NOMENCLATURE OR DESCRIPTION
MATERIAL OR NOTE
SPECIFICATION
CODE IDENT
LIST OF MATERIAL OR PARTS LIST
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DIMENSIONS BEFORE PLATING
BREAK ALL SHARP CORNERS
FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON
DECIMALS
ANGLES
HOLES (DRILL)
SEE NOTES
UNICOM
501 VANDELL WAY
CAMPBELL CA 95008
PCB ASSEMBLY-
MOTHER BOARD(701)
SIZE
D
DRAWING NO
ED-1103-01
REV
B
SHEET

SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8000-1103-01 PCB ASSY-MOTHER BRD (701) UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: B SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION	REMARKS	EDT REV CD	PR CD	STYPE	SPR	ARC	PAL	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1300-0001-00	SPEAKER-8 OHM 20% 1.5 IN	LS1			P	1	B	P	EA	1.00					
010	1700-1103-01	PCB-MOTHER BRD (701)	PC1			P	1		P	EA	1.00					
015	2100-0125-00	CON-22PIN DUAL SHT DIP	J1-3			P	1	B	P	EA	3.00					
020	2100-0201-00	CON-TEL JACK RESCOM	J5			P	1	C	P	EA	1.00					
025	2100-0204-00	CON-TEL JACK 8 CONDOCKT	J4,6			P	1	C	P	EA	2.00					
030	2101-0007-00	CON-16 PIN CARRIER ASSY-	MP19			P	1	B	P	EA	1.00					
035	2101-0008-00	CON-14 PIN IC SCK W/4 POST	MP11-18			P	1		P	EA	8.00					
040	2101-0014-04	CON-LOCK 4 PIN	J7			P	1	C	P	EA	1.00					
045	2101-0017-10	CON-10 CONTACT FEMALE	P1			P	1	C	P	EA	1.00					
050	2101-0017-30	CONTACT-PIN MOLEX	MP1-10			P	1	D	P	EA	10.00					
055	2400-0056-00	DISPLAY-SEVEN SEG. GREEN	IC5-8			P	1	B	P	EA	4.00					
060	2400-0057-00	DISPLAY-SEVEN SEG. RED	IC2-4			P	1	B	P	EA	3.00					
065	2400-0058-00	DISPLAY-PLUS-MINUS RED	IC1			P	1	B	P	EA	1.00					
070	2500-0002-47	CLAMP SPEAKER	MP20			P	1		P	EA	1.00					
075	4700-0421-00	R-FXD CC 10K OHM 5% 1/4W	R4,5			P	1	C	P	EA	2.00					
080	4751-0050-01	R-VAR 10K SINGLE TURN	R1			P	1		P	EA	1.00		27-A	-78		
085	4751-0060-06	R-VAR TEN TURN 5K	R2,3			P	1		P	EA	2.00					
090	4800-3904-00	TSTR-NPN SI SM 2N3904	Q1,2			P	1	C	P	EA	2.00					
095	5100-0206-03	SW-TOGGLE DP3T FLAT BAT	S1,3			P	1		P	EA	2.00					
100	5100-0206-04	SW-TOGGLE DPDT FLAT BAT	S2,4,5			P	1		P	EA	3.00					
105	5100-0252-01	SW-TOGGLE 3P3T FLAT BAT	S6			P	1		P	EA	1.00					
110	6010-2158-03	RIBBON CABLE ASSY-16 PIN	CA1			P	1	X	P	EA	1.00					

WIRING LIST WL- 1103 - 01 REV D ECO NO 00373 PAGE 1 OF 6

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO	DESIGNATOR	PIN NO	
CKTGND	E17		P1	9	20 AWG WHT 16"
SLGND	E18		P1	10	20 AWG BLK 16"
DIGGND	E22		P1	4	20 AWG ORG 16"
DIGGND	E22		E1		20 AWG GRN 6 1/2"
BAT9V	E20		P1	1	20 AWG BRN 16"
AC9V	E19		P1	5	20 AWG GRN 16"
BAT5V	E21		P1	3	20 AWG YEL 16"
AC5V	E26		P1	8	20 AWG GRY 16"
-9V	E23		P1	7	20 AWH VIO 16"
DCGND	E24		P1	2	20 AWG RED 16"
ACGND	E25		P1	6	20 AWG BLU 16"

H06-1004-A

WIRING LIST WL- 1103 - 01 REV see sheet 1 ECO NO. _____ PAGE 2 OF 6

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
SPK DRV	E3		LS1	1	24 AWG BRN, 3" TP
ANAGND	E2		LS1	2	24 AWG RED, 3" TP
SPKIN	E4		R1	2	24 AWG GRN, 3" twisted
SPKHI	E5		R1	3	24 AWG YEL, 3" twisted
ANAGND	E6		R1	1	24 AWG BLU, 3" twisted
XMTDRV	E7		R2	3(CW)	24 AWG VIO, 3" twisted
XMTLEV	E8		R2	2(S)	24 AWG BLU, 3" twisted
XMTLOW	E9		R2	1(CCW)	24 AWG YEL, 3" twisted
VCOLOW	E12		R3	1(CCW)	24 AWG BRN, 3" twisted
VCOIN	E13		R3	2(S)	24 AWG ORG, 3" twisted
ANAGND	E14		R3	3(CW)	24 AWG RED, 3" twisted

H06-1004-A

WIRING LIST WL-1103 - 01 REV see sheet 1 ECO NO _____ PAGE 3 OF 6

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
XMTOT1	E10				WHT 8"
				Cable #2	Shielded AWG
XMTOT2	E11				BLK
SHIELD 1	J2	1			GRN
RCVTIP	E16			Cable #1	Shielded AWG WHT
					6"
RCVRNG	E15				BLK
SHIELD 2	J3	1			GRN

H06-1004-A

WIRING LIST WL- 1103 - 01 REV See ECO NO. sheet 1 PAGE 4 OF 6

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
NOTE: All connections from here on are etched traces.					
*: Refer to Schematic					
**: As viewed from comp. side of board (ED side)					
DIGGND	J1	1.A			
ANAGND	J2	1.A	J3	1.A	
+9V	J1	2.B	J2	2.B	
+9V	J2	2.B	J3	2.B	
+9V	J2	2.B	S6	*	
-9V	J1	3.C	J2	3.C	
-9V	J2	3.C	J3	3.C	
-9V	J1	3.C	J7	4	
+5V	J1	4.D	J2	4.D	
+5V	J2	4.D	J3	4.D	
+5V	J1	4.D	S6	*	
+VREF	J2	5	J3	5	
-VREF	J2	6	J3	6	
AGC	J1	6	J3	22	
OUTRNG	J1	7	J2	N	
UNDRNG	J1	8	J2	K	
AGC40	J1	12	J3	21	

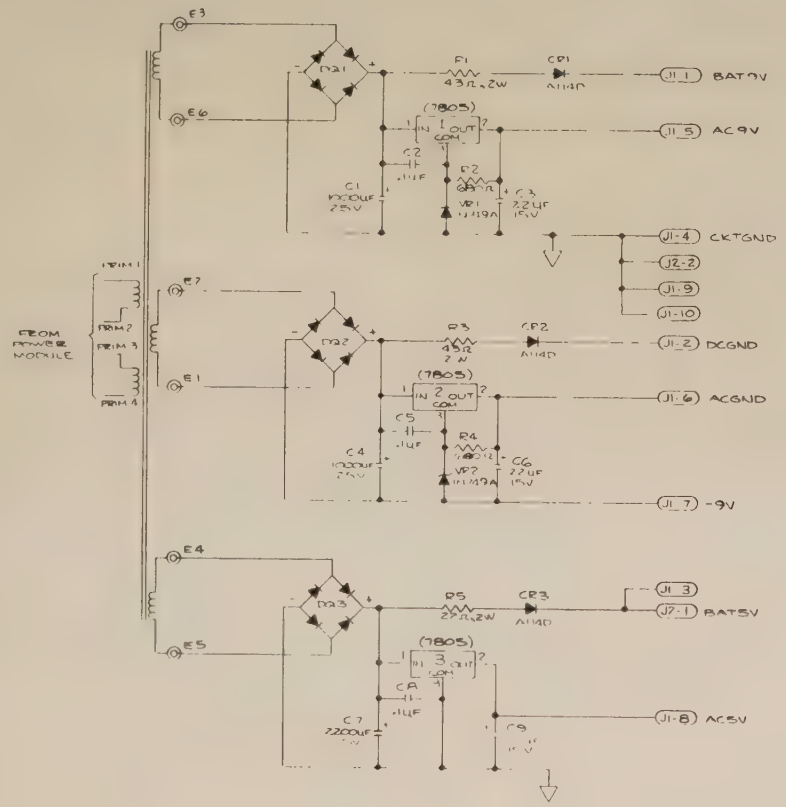
SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
ENDMES	J1	13	J2	P	
$\overline{VF}$	J1	18	J3	S	
$\overline{VF}$	J1	18	R5	*	
$\overline{VF}$	J1	18	CA1	8**	
$\overline{FRQ}$	J1	19	J2	S	
OVRRNG	J1	J	J2	L	
LOGWND	J1	U	J2	R	
VFCAP	J2	11	CA1	10**	
PRCAP	J2	12	CA1	7**	
$\overline{REC}$	J2	19	J3	N	
$\overline{REC}$	J2	19	S2	*	
$\overline{PROG}$	J3	17	CA1	6**	
$\overline{QUIET}$	J2	21	J1	5	

WIRING LIST WL-1103 - 01 REV See sheet 1 PAGE 6 OF 6

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
$\overline{\text{XMT}}$	J1	F	S2	*	
$\overline{\text{XMT}}$	J1	F	J3	P	
(SPARE)	J2	H	J3	7	
SIGMES	J2	M	J3	19	
RCVOUT	J2	T	J3	H	
XMTOT2	J2	W	E11	-	
XMTOT1	J2	X	E10	-	
XMT600	J2	Z	CA1	15**	
RCV900	J3	J	CA1	13**	
$\overline{\text{LEVEL}}$	J1	H	J3	M	
$\overline{\text{LEVEL}}$	J1	H	S1	*	
WGTD	J3	R	CA1	9**	

H06-1004-A

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11-17-76	SB



1. IC 1,2 & 3 TO HAVE HEATSINKS INSTALLED

NOTES: UNLESS OTHERWISE SPECIFIED

ITEM NO.	PART OR IDENTIFYING NO.	QTY. REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES.
DIMENSIONS BEFORE PLATING.
BREAK ALL SHARP CORNERS.

63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:
DECIMALS
ANGLES ± 1°
HOLES (DRILL) ± .005
FINISH

HALCYON INC. 501 VANDELL WAY CAMPBELL, CA 95008

POWER SUPPLY BOARD

NEXT ASSY.	QTY. PER ASSY.	QTY. PER MAT'L	MODEL NO.

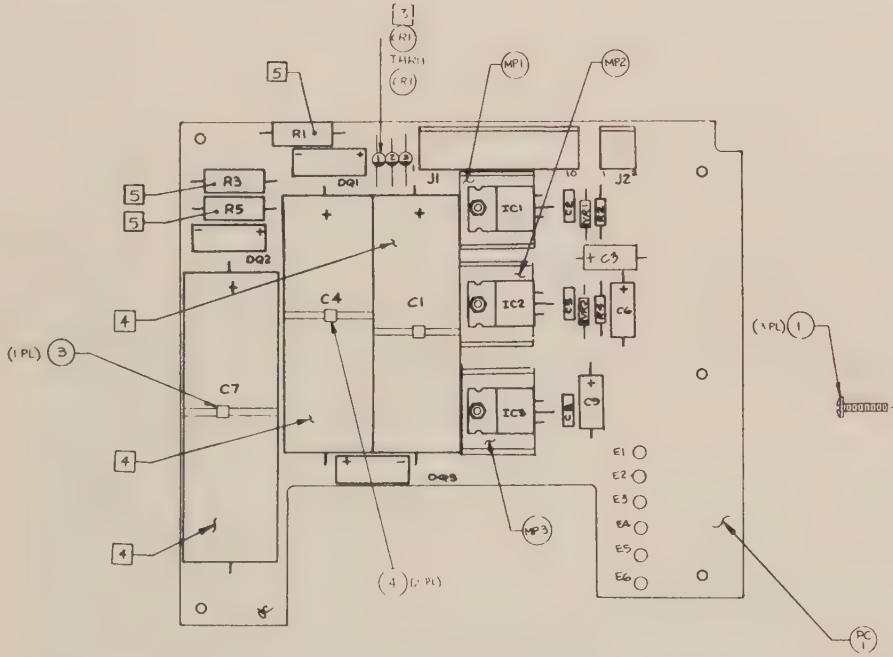
DATE	SIZE	DRAWING NO	REV
JANUARY 76	D	SD-1104-00	A
BY			
APPROVED			
APPROVED		SCALE —	STOCK AS —

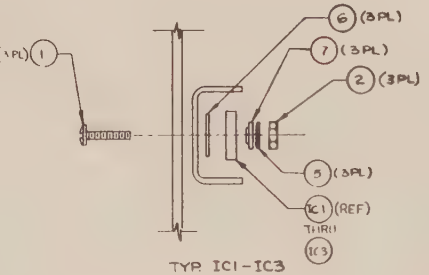
SHEET 1 of 1

DO NOT SCALE DWG

SD-1104-00-A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11-17-76	
B	REVISED PER ECO #00610	1-20-78	
C	REVISED PER ECO #00714	4-10-78	
D	REVISED PER ECO # 00855	7-16-79	





TYP IC1-IC3

ITEM NO	PART OR IDENTIFYING NO	QTY REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
7	2800 0225.00	3	WASHER-SHOULDER, #4			
6	2800 0098 01	3	INSULATOR, #4			
5	2800 0042-00	5	WASHER SPLIT-LOCK #4			
4	6002-0171-00	2	TIE-WRAP			
3	6002-0173-00	1	TIE-WRAP			
2	2800 0042 00	3	NUT-HEX, #4			
1	2800 0124-00	3	SCREW BH "4 .90 x 5/16 LG			

LIST OF MATERIAL OR PARTS LIST

[5] INSTALL R1, 3 AND 5 APPROX .125 UP OFF BOARD.

[4] SECOND ASSEMBLY C1,C4,IC 1.

[3] CR1-CR3 TO BE RAISED OFF PCB AT INSTALLATION.

2. FOR LIST OF MATERIALS SEE 8000-1104 00.

1 FOR SCHEMATIC SEE SD-1104 00.

NOTES-UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS

√ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:

DECIMALS

ANGLES ± 1°

HOLES (DRILL) +.005 -.000

FINISH SEE NOTES

NEXT ASSY	QTY NEXT	QTY FINAL	MODEL NO
1 D 1104 25	1	-	704A
1 C 1104 25	1		IC1A

LINCOLN INC 501 VANDELL WAY CAMPBELL CA 95008

PCB ASSEMBLY-
POWER SUPPLY BOARD

DATE 19-MAY-76 BY [illegible] APPROVED [illegible] APPROVED [illegible]

SIZE D DRAWING NO ED-1104-00 REV D

SCALE 2X STOCK AS 8000 SHEET 1 OF 1

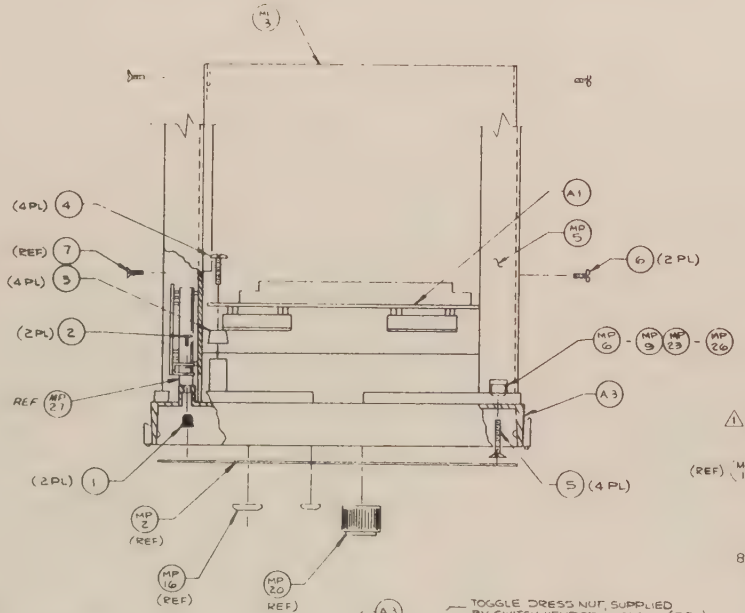
DO NOT SCALE DRAWING

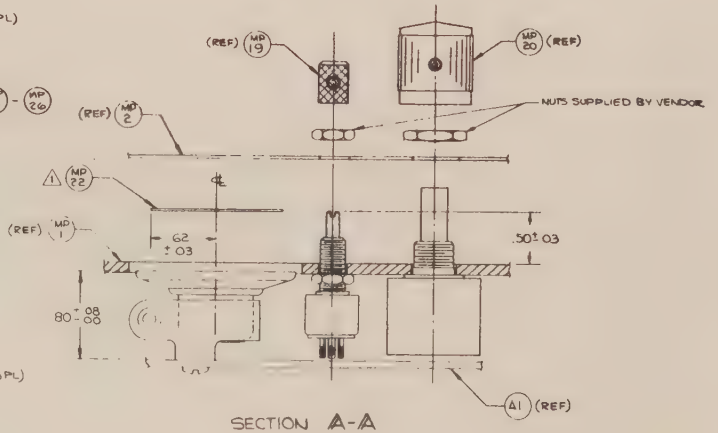
SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8000-1104-00 PCB ASSY-POWER SUPPLY ANALOG UM: EA ERC: A PROD CODE: SRCE CODE: A ECN: DATE: 00-XXX-00 ASSEMBLY QTY: 1

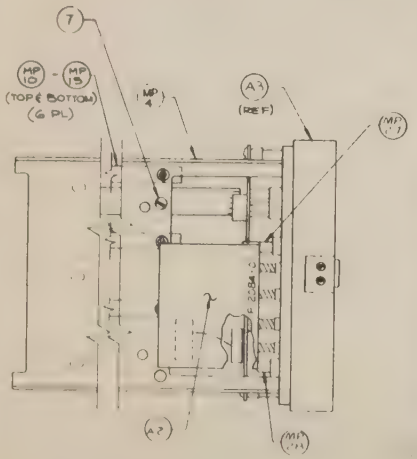
ITEM NO.	COMPONENT PARTS	PART DESCRIPTION / REMARKS	EDT REV CD	PR CD	S T E	S Y P	A P R	B L C	P N	UM	EXTENDED QTY PER	ECN CHG	START DATE	S/N	CLOSE DATE	S/N
005	1501-0074-00	C-FXD CER .1UF 10% 100V C2,5,8			P	1		C	P	EA	3.00					
010	1503-0125-00	C-FXD TA 22UF 10% 15WVDC C3,6,9			P	1		C	P	EA	3.00					
015	1504-0250-00	C-FXD AL ELECT 1000UF 25V C1,4			P	1		B	P	EA	2.00					
020	1504-0255-00	C-FXD AL ELECT 2200UF 25V C7			P	1		B	P	EA	1.00					
025	1700-1104-00	PCB-POWER SUPPLY AC & BATTERY PC1			P	1			P	EA	1.00					
030	2101-0014-02	CON-LOCK 2 PIN J2			P	1		C	P	EA	1.00					
035	2101-0014-10	CON-LOCK 10 PIN J1			P	1		C	P	EA	1.00					
040	3131-0101-00	IC-UA7805 REGULATOR 5V IC1-3			P	1		B	P	EA	3.00					
045	4700-0393-00	R-FXD CC 680 OHM 5% 1/4W R2,4			P	1		C	P	EA	2.00					
050	4707-1505-56	R-FXD WW 22 OHMS 5% 2W R5			P	1			P	EA	1.00					
055	4707-1505-63	R-FXD WW 43 OHMS 5% 2W R1,3			P	1			P	EA	2.00					
060	4802-0749-00	DIODE-ZENER 4.3V IN749A VR1-2			P	1			P	EA	2.00					
065	4803-0001-00	DIODE-RECT 1A 300V CR1-3			P	1		C	P	EA	3.00					
070	4803-0005-00	RECTIFIER-BRIDGE 1A DB1-3			P	1		B	P	EA	3.00					
075	4804-0005-00	HS-TO 220 PACK MP1-3			P	1			P	EA	3.00					

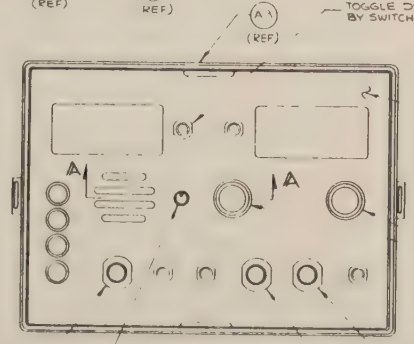
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11/5/79	DB
B	REVISED PER ECO 00483	4/8/80	
C	REVISED PER ECO # 00517	9/4/80	DB
D	REVISED PER ECO #00822 PMK	1/5/81	





SECTION A-A
SCALE: 2/1





ITEM NO.	PART OR IDENTIFYING NO.	QTY REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
7	2800-0323-00	2	SCREW-FLAT HD 4-40x1/4			
6	2800-0123-00	2	SCREW-B.H 4-40 x 1/4 LG			
5	2800-0343-00	4	SCREW-FLAT HD 6-32x3/8			
4	2800-0017-01	4	SCREW-SELF TAP 6-32x3/8			
3	2800-8090-00	4	FASTNER-CAPSERT #6			
2	2800-0102-00	2	SCREW-B.H 2-56x3/16			
1	2800-8070-00	2	FASTNER-SELF LOCK #2			

LIST OF MATERIAL OR PARTS LIST

NEXT ASSY	QTY NEXT	QTY FINAL	MODEL NO.
1 1136-06	1	-	701A
1 1136-06 (X)	1	-	701A

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.
63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON:
DECIMALS
ANGLES ±1°
HOLES (SMALL) ±.005
FINISH

HALCYON INC. 507 VANDELL WAY CAMPBELL, CA 95008

ASSEMBLY-
FRONT PANEL - 701A

DRAWN BY
APPROVED
APPROVED

SIZE D | DRAWING NO. ED-1122-24 | REV D

SCALE | MATL | STOCK AS B210 | SHEET 1 OF 1

DO NOT SCALE PRINT

ED-1122-24

1. AFTER ALL COMPONENTS ARE FITTED THRU FRONT PANEL (A1) INSTALL SCREEN ON LABEL, SPEAKER GRILL OPENING AND PRESS ONTO ADHESIVE. FIT FRONT LABEL ONTO PANEL, THEN ADD ALL DRESS NUTS AND KNOBS.

NOTES: UNLESS OTHERWISE SPECIFIED

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

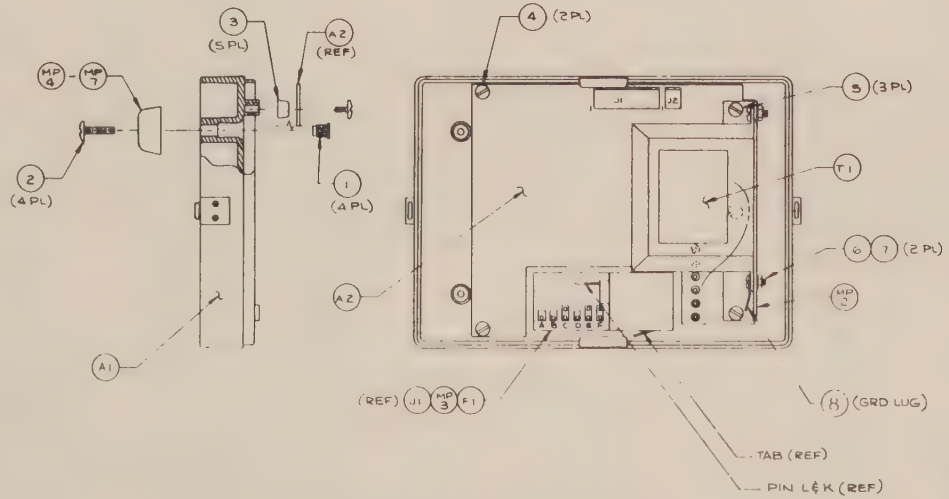
PARENT PART: 8210-1122-24 ASSY-FRONT PANEL MOD 701 UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ENG: D SRCE CODE:A TYPE: 1 ANC: X PLAN CODE: P DATE: 00-XXX-00

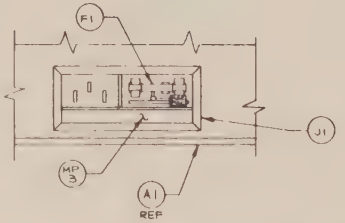
ITEM NO.	COMPONENT PARTS	E N G	PART DESCRIPTION / REMARKS	S C D	T E	Y P	S R	A C	P L	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1401-0002-00		GUIDE-CARD 8.5 IN L MP10-15	P	1			C	P	EA	6.00					
010	2401-0054-07		KNOB-.70 DIA KO/DOT SKIRT 1/4 MP20,21	P	1			B	P	EA	2.00					
015	2450-1124-00		LABEL-FRONT PANEL 701A MP2	P	1				P	EA	1.00					
025	2500-0001-37		NUT-DRESS 510 JACK MP16-18	P	1			C	P	EA	3.00					
030	2500-0001-46		PANEL-SIDE MP4,5	P	1				P	EA	2.00					
035	2500-0001-63		BRACKET-SHIELD MP3	P	1				P	EA	1.00					
040	2500-0002-41		SCREEN-SPEAKER MP22	P	1				P	EA	1.00					
045	2500-1154-01		KNOB-KNURLED W/INDICATOR MP19	P	1				P	EA	1.00					
050	2800-7122-00		SPACER-ROUND AL 1/4 D .25 MP27,28	P	1			C	P	EA	2.00					
055	2800-8064-01		RETAINER-EDGE PANEL MP6-9,23-26	P	1				P	EA	8.00					
060	8000-1105-01	B	PCB ASSY-MOTHER BRD (701) A1	A	1		Y	P	P	EA	1.00					
065	8000-2004-01	A	PCB ASSY-TERMINATION BOARD A2	A	1		Y	P	P	EA	1.00					
070	8100-0004-71	A	ASSY, BEZEL & KEEPER-FRONT A3	A	1			*	P	EA	1.00		29-JAN-79			

NOTES:

NO RECORDS ON DP1:(1,11)ZZBMOS.FMS

SYM	REVISIONS DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11-17-76	
B	REVISED PER ECO #00822	1/16/79	





ITEM NO.	PART OR IDENTIFYING NO.	QTY REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
8	2802-0024-00	1	LUG-SOLDER			
7	2800-0022-00	2	NUT-KEP 4-40			
6	2800-0124-00	2	SCREW-B.H. 4-40 x 5/16 LG			
5	2800-0431-02	3	SCREW-SELF TAP 6-32 x 3/8 LG			
4	2800-0431-00	2	SCREW-SELF TAP 6-32 x 1/4 LG			
3	2800-8030-00	5	CAPSERT #6			
2	2800-0170-00	4	SCREW-B.H. #0-32 x 3/4 LG			
1	2800-8070-03	4	FASTNER-INSERT #8			

LIST OF MATERIAL OR PARTS LIST

2. FOR WIRING LIST SEE WL-1122-25

1. INSTALL MP2 TO MP1 BEFORE INSTALLING T1

NOTES- UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS. 63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED. TOLERANCES ON: DECIMALS, ANGLES ±1°, HOLES (DRILL) +.005 -.000, FINISH.

NEXT ASSY | QTY REQ'D | QTY PROD | MODEL NO.

UNILOGIC INC.
501 VANDELL WAY
CAMPBELL, CA 95008

ASSEMBLY- REAR PANEL

DATE 6JUN76 | SIZE D | DRAWING NO. ED-1122-25 | REV B

BY DE | APPROVED | DRAWN | SCALE 1X | STOCK AS 8200 | SHEET 1 of 1

DO NOT SCALE DWG

EFFECTIVITY DATE: ALL — SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: A200-1122-25 ASSY-BACK PANEL MOD 701 UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: B SRCE CODE:A TYPE: 1 ABC: X PLAN CODE: P DATE: 00-XXX-00

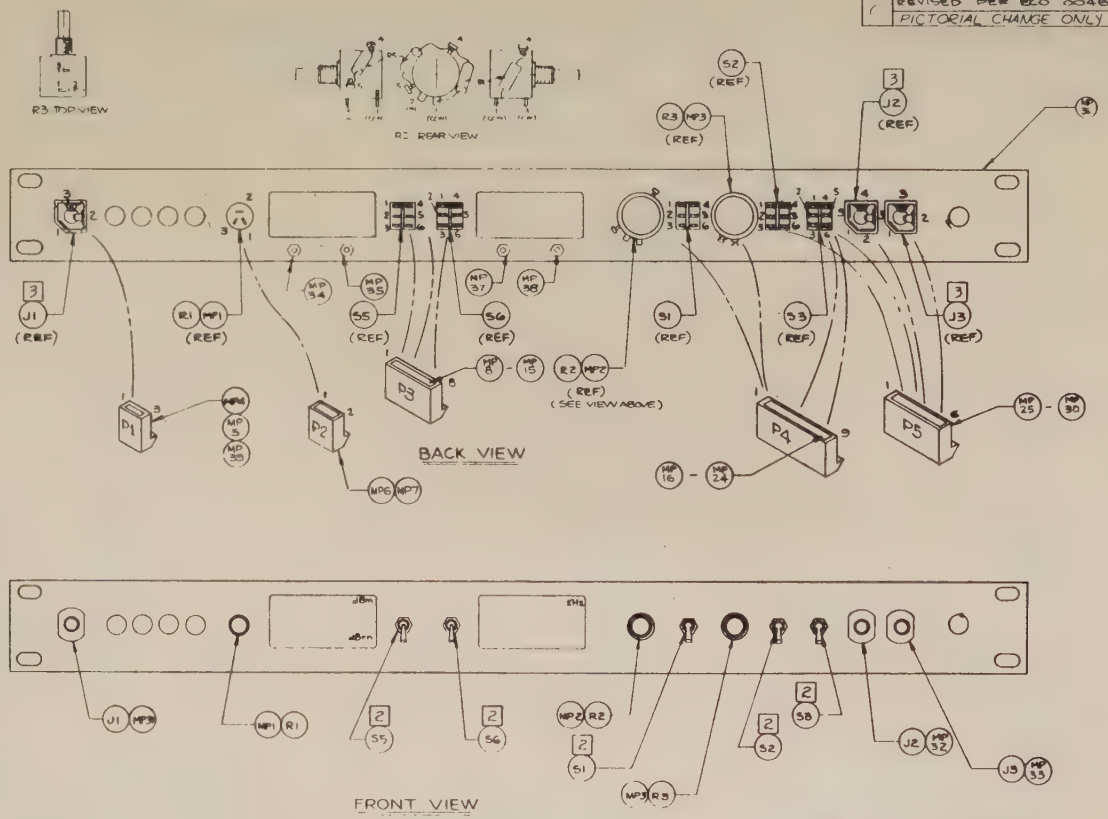
ITEM NO.	COMPONENT PARTS	E R C	PART DESCRIPTION / REMARKS	PR CO	S C E	T Y P	S A R	P R C	L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	S/N	CLOSE DATE	S/N
005	2101-0050-01		MODULE-POWER A/C W/FILTER J1	P	1			P		EA	1.00					
010	2450-0007-00		LABEL-PWR MOD 25 VA MAX MP3	P	1			P		EA	1.00					
020	2500-0001-50		BRACKET-XMR MTG MP2	P	1			P		EA	1.00					
025	2802-0210-27		BUMPER-RECESSED MP4-7	P	1			P		EA	4.00					
030	5101-0031-00		FUSE-CART 1/4A S/B F1	P	1		C	P		EA	1.00					
035	5600-0015-01		X FORMER PWR 50-400 HZ 9V OUT T1	P	1			P		EA	1.00					
040	A000-1104-00	A	PCB ASSY-POWER SUPPLY ANALOG A2	A	1			P		EA	1.00					
045	A100-0004-72	A	ASSY, BEZEL & KEEPER-REAR A1	A	1		*	P		EA	1.00		29-JAN-79			

WIRING LIST WL-- 1122 - 25 REV A ECO NO. PAGE 1 OF 1

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
	J1	F	J1	L	24 AWG WHT/YEL 2 1/2"
	J1	B	J1	K	20 AWG WHT/YEL 2 1/2"
	J1	TAB	GRD	LUG	20 AWG BLK 3"
PRIM 1	J1	C	T1	BLK	
PRIM 2	J1	E	T1	GRY	NONE
PRIM 3	J1	D	T1	WHT/BLK	
PRIM 4	J1	F	T1	WHT/GRY	
	E3		T1	RED	
	E6		T1	WHT/RED	
	E2		T1	YEL	NONE
	E1		T1	WHT/YEL	
	E4		T1	ORG	
	E5		T1	WHT/ORG	

H06-1004-A

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	2-9-76	DS
B	REVISED PER ECO 00434	11-2-77	DS
C	REVISED PER ECO 00483	4-8-77	DS
	PICTORIAL CHANGE ONLY	4/11/78	DS



[3] DO NOT INSTALL WASHER PROVIDED BETWEEN JACK & PANEL

[2] DRESS HARDWARE SUPPLIED BY VENDOR

1. FOR WIRING LIST SEE WL-1143-01

NOTES- UNLESS OTHERWISE SPECIFIED

ITEM NO	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.

FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON: DECIMALS ±.1" ANGLES ±1° HOLES (DRILL) +.003 -.000

FINISH: SEE NOTES

J 1143-00 | 1 | 1 | 702 — NEXT ASSY | QTY. NEXT | QTY. THIS | MODEL NO.

HALCYON INC. 301 VANDELL WAY CAMPBELL, CA 95008

ASSEMBLY- FRONT PANEL

DRAWN BY | DATE | SIZE D | DRAWING NO. ED-1143-01 | REV G

SCALE 1 X | STOCK SIZE 8.5 X 10 | SHEET 1 OF 1

DO NOT SCALE DRAWING

SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8210-1143-01 ASSY-FRONT PANEL MOD 702 UM: EA ERC: C PROD CODE: SRCE CODE: A ECN: DATE: 00-XXX-00 ASSEMBLY QTY: 1

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION	REMARKS	EDT REV CD	PR CD	S C E	T Y P	S P R	A P C	L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	2100-0201-00	CON-TEL JACK WESCOM	J2			P	1		C	P	EA	1.00					
010	2100-0204-00	CON-TEL JACK B CONDOCKT	J1,3			P	1		C	P	EA	2.00					
015	2101-0017-02	CON-FEMALE 2 PIN	P2			P	1		C	P	EA	1.00					
020	2101-0017-03	CON-FEMALE 3 PIN	P1			P	1		C	P	EA	1.00					
025	2101-0017-06	CON-FEMALE 6 PIN	P5			P	1		C	P	EA	1.00					
030	2101-0017-08	CON-FEMALE 8 PIN	P3			P	1		C	P	EA	1.00					
035	2101-0017-09	CON-FEMALE 9 PIN	P4			P	1		C	P	EA	1.00					
040	2101-0017-30	CONTACT-PIN MOLEX	MP4-30,39			P	1		D	P	EA	28.00					
045	2401-0054-07	KNOB-.70 DIA W/DOT SKIRT 1/4	MP2,3			P	1		B	P	EA	2.00					
050	2500-0001-37	NUT-DRESS 310 JACK	MP31-33			P	1		C	P	EA	3.00					
055	2500-1134-01	KNOB-KNURLED W/INDICATOR	MP1			P	1		P		EA	1.00					
060	2500-1143-03	PANEL-FRONT MOD 702	MP36			P	1		P		EA	1.00					
065	2801-0010-00	SPACER-HEX SS 3/16 AF 2-5	MP34,35,37,38			P	1		C	P	EA	4.00					
070	4703-0151-00	R-FXD MC 365 OHM 1% 1/8	R4			P	1		P		EA	1.00					
075	4703-0239-00	R-FXD MF 3010 OHM 1% 1/8W	R5			P	1		C	P	EA	1.00					
080	4751-0050-01	R-VAR 10K SINGLE TURN	R1			P	1		P		EA	1.00					
085	4751-0080-06	R-VAR TEN TURN 5K	R3			P	1		P		EA	1.00					
090	4751-0090-00	R-VAR 22K 10 TURN W/2 TAPS	R2			P	1	9	P		EA	1.00					
095	5100-0206-00	SW-TOGGLE DPDT FLAT BAT	S1,5			P	1		B	P	EA	2.00					
100	5100-0206-05	SWITCH-TOGGLE	S2,3,6			P	1		P		EA	3.00					

WIRING LIST WL- 1143 - 01 REV. E ECO NO. PAGE 1 OF 4

ASSY FRONT PANEL

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
	S2	1	J1	2	24 AWG ORG 14 1/2"
	S2	4	J1	3	24 AWG YEL 14 1/2"
				Twisted Pair	
RCV TIP	J1	2	P1	1	24 AWG ORG 8"
RCV RNG	J1	3	P1	2	24 AWG YEL 8"
				Twisted Pair	
ARNGIN	R1	3	P2	2	24 AWG RED 15"
SPKIN	R1	2	P2	1	24 AWG BLU 15"
				Twisted Pair	
$\overline{\text{XMT}}$	S6	1	P3	5	24 AWG GRN 6 1/2"
$\overline{\text{REC}}$	S6	3	P3	6	24 AWG BLU 6 1/2"
SIG XMT	S6	4	P3	7	24 AWG VIO 6 1/2"
XMT SIG	S6	5	P3	8	24 AWG GRY 6 1/2"
$\overline{\text{LEVEL}}$	S5	1	P3	1	24 AWG BRN 6 1/2"
ANA GND	S5	2	P3	2	24 AWG RED 6 1/2"

H06-1004-A

WIRING LIST WL- 1143 - 01 REV See ECO NO. sheet 1 PAGE 2 OF 4

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
	S5	2	S6	6	24 AWG RED 2 1/2"
	S6	6	S6	2	Buss Wire
	R1	1	J1	1	24 AWG GRN 6 1/2"
	S5	2	J3	1	24 AWG WHT/RED 12"
	J3	1	J2	1	24 AWG WHT 2 1/2"
	J2	1	S1	2	24 AWG WHT/BLK 5 1/2"
$\overline{\text{NOTCH}}$	S5	4	P3	3	24 AWG ORG 6 1/2"
$\overline{\text{NOISE}}$	S5	6	P3	4	24 AWG YEL 6 1/2"
Function Switch	S5	5	S5	3	Buss Wire
HOLD SW	S3	3	N.C.		
HOLD SW	S3	6	N.C.		
XMT LOW	R2	3	P4	1	24 AWG BRN 7"
XMT LEV	R2	2	P4	2	24 AWG RED 7"
XMT DRV	R2	1	P4	3	24 AWG ORG 7"

H06-1004-A

WIRING LIST WL- 1143 - 01 REV See ECO NO. sheet 1 PAGE 3 OF 4

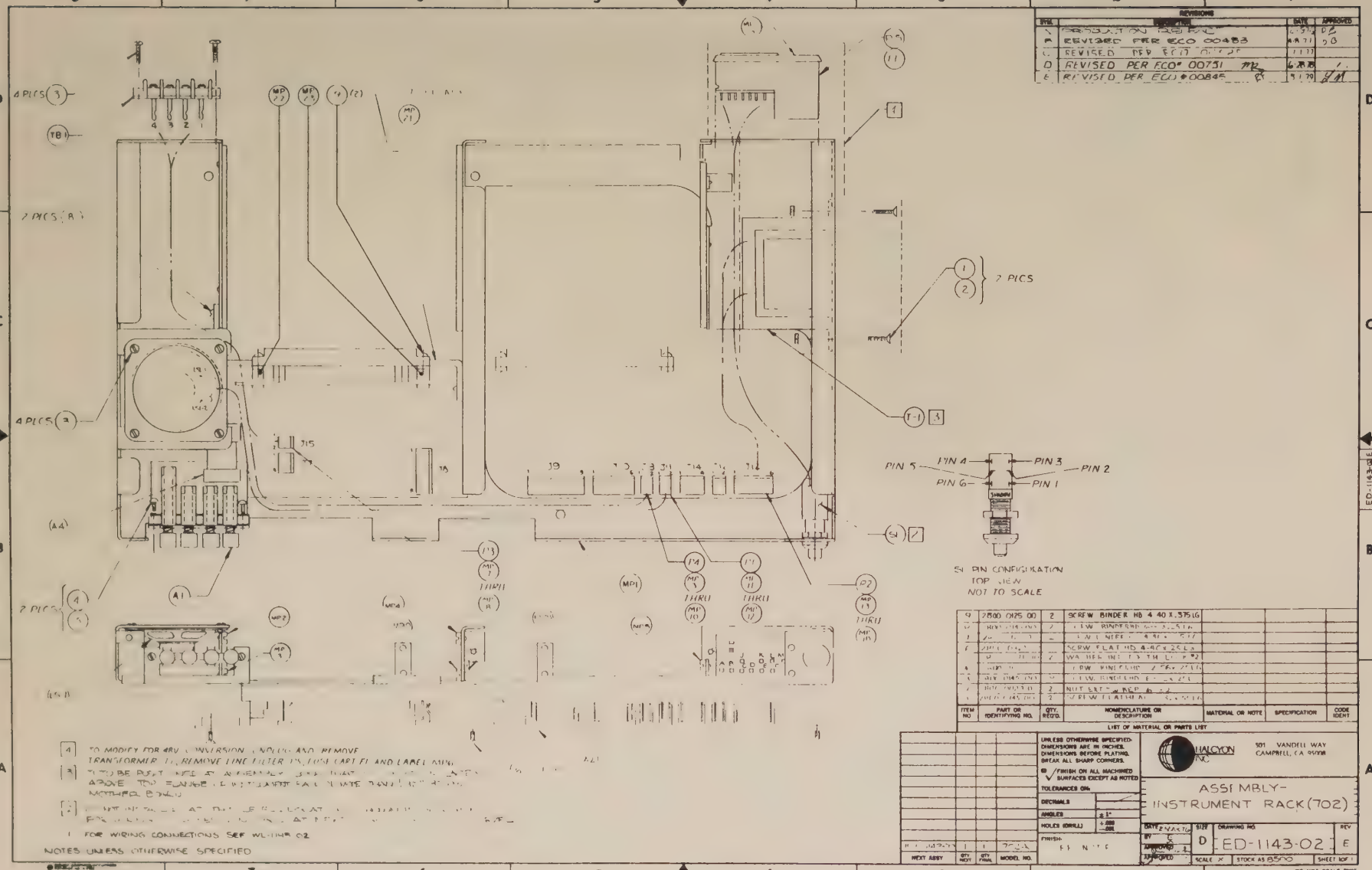
SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
HOLD 2	S3	4	P5	1	24 AWG BRN 4 1/2"
HOLD 1	S3	1	P5	2	24 AWG RED 4 1/2"
				Twisted Pair	
	S3	5	J2	4	24 AWG WHT/ORG 2 1/2"
	J2	4	J3	3	24 AWG WHT/ORG 2 1/2"
	S3	2	J2	3	24 AWG WHT/YEL 3 1/2"
	J2	3	J3	2	24 AWG Wht/YEL 2 1/2"
XMT TIP	J3	3	P5	5	24 AWG BLU 5 1/2"
XMT RNG	J3	2	P5	6	24 AWG VIO 5 1/2"
				Twisted Pair	
	J2	5	S2	2	24 AWG WHT/BLU 4"
	J2	2	S2	5	24 AWG WHT/VIO 3 1/2"
XMTT	S2	3	P5	3	24 AWG WHT 6"
XMTR	S2	6	P5	4	24 AWG BLK 6"
				Twisted Pair	
$\overline{\text{QUIET}}$	S1	6	P4	4	24 AWG BLU 7"
$\overline{\text{OSC}}$	S1	1	P4	5	24 AWG YEL 7"

H06-1004-A

WIRING LIST WL- 1143 - 01 REV See ECO NO. Sheet 1 PAGE 4 OF 4

SIGNAL NAME	FROM		TO		WIRE PART NO.
	DESIGNATOR	PIN NO.	DESIGNATOR	PIN NO.	
$\overline{1004\ Hz}$	S1	4	P4	6	24 AWG GRN 7"
	S1	5	S1	3	Buss Wire
VCO LOW	R3	1	P4	7	24 AWG VIO 7"
VCO IN	R3	2	P4	8	24 AWG GRY 7"
VCO HI	R3	3	P4	9	24 AWG WHT 7"
	J1	1	P1	3	24 AWG GRN 9 1/4"
R5	R2	4	R2	5	
R4	R2	4	R2	1	

H06-1004-A



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	RELEASED PER ECO 00483	4-4-77	DB
B	REVISED PER ECO 00731	6-28-78	DB
C	REVISED PER ECO #00845	9-1-79	DB

ITEM NO	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
9	2800 0125 00	2	SCREW BINDER HD 4-40 X .375 LG			
8	[illegible]	2	[illegible]			
7	[illegible]	[illegible]	[illegible]			
6	[illegible]	2	SCREW FLAT HD 4-40 X .250 LG			
5	[illegible]	2	WASHER INSULATING .[illegible]			
4	[illegible]	[illegible]	[illegible]			
3	[illegible]	[illegible]	[illegible]			
2	[illegible]	2	NUT [illegible]			
1	[illegible]	2	SCREW [illegible]			

LIST OF MATERIAL OR PARTS LIST

[4] TO MODIFY FOR 48V CONVERSION, UNSOLD AND REMOVE TRANSFORMER T1, REMOVE LINE FILTER FL, FUSE CARTRIDGE AND LABEL MIN.

[3] T1 TO BE POSITIONED AS APPROPRIATE SUCH THAT [illegible] ABOVE THE ENCLOSURE WITH [illegible] FACE TOWARD THE MOTHER BOARD.

[2] [illegible] AT THE LOCATION [illegible] FOR WIRING CONNECTIONS SEE WIRING 02

NOTES UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.

✓ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:

DECIMALS

ANGLES ±1°

HOLES (DRILL) +.003 -.000

FINISH: [illegible]

NEXT ASSY | QTY NEXT | QTY FINAL | MODEL NO.

HALCYON INC. 501 VANDELL WAY CAMPBELL, CA 95008

ASSEMBLY- INSTRUMENT RACK (702)

DRAWN [illegible] | SIZE D | DRAWING NO. ED-1143-02 | REV E

BY [illegible] | APPROVED [illegible] | APPROVED [illegible] | SCALE X | STOCK AS 8500 | SHEET 1 OF 1

DO NOT SCALE DWG

ED-1143-02

EFFECTIVITY DATE: ALL

S I N G L E L E V E L B I L L S O F M A T E R I A L

PARENT PART: 8500-1143-02 ASSY-INSTRUMENT RACK MOD 702 UM: EA PROD CODE: ECN: 00723 ASSEMBLY QTY: 1
ERC: F SRCE CODE:A TYPE: 1 ARC: X PLAN CODE: P DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	E R C	PART DESCRIPTION / REMARKS	PR CO	C E	Y P	S T R	S A B	P L	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1300-0002-00		SPEAKER-45 OHM 2.5IN LS1	P	1			B	P	EA	1.00					
010	1401-0002-00		GUIDE-CARD 4.5 IN L MP2-4,5,19,20	P	1			C	P	EA	6.00					
015	2100-0030-04		TERM STRIP-BARRIER 4POS TB1	P	1			C	P	EA	1.00					
020	2101-0017-02		CON-FEMALE 2 PIN P1,3,4	P	1			C	P	EA	3.00					
025	2101-0017-06		CON-FEMALE 6 PIN P2	P	1			C	P	EA	1.00					
030	2101-0017-30		CONTACT-PIN MOLEX MP7-18	P	1			D	P	EA	11.00					
035	2101-0050-01		MODULE-POWER A/C W/FILTER P5	P	1				P	EA	1.00					
040	2450-0007-00		LABEL-PWR MOD 25 VA MAX MP6	P	1				P	EA	1.00					
043	2500-0001-62		BRACKET PCB EXTENDER & CONN MG MP22,23	P	1				P	EA	2.00		07-MAR-79			
045	2500-0004-64		SUPPORT BRKT, DIGITAL BD MP21	P	1				P	EA	1.00					
050	2500-1143-04		RACK-INSTRUMENT MOD 702 MP1	P	1				P	EA	1.00					
055	5100-0180-00		SW-PUSHBUTTON 2PDT BLK-GRN S1	P	1			*	P	EA	1.00		05-JUL-78			
060	5101-0031-00		FUSE-CART 1/4A S/B F1	P	1			C	P	EA	1.00					
065	5600-0015-01		X FORMER PWR 50-400 HZ 9V OUT T1	P	1				P	EA	1.00					
070	6010-0020-12		RIBBON CAB ASSY 16 PIN A4	A	1			X	P	EA	1.00		04-MAY-79			
075	8000-1148-00	B	ASSY-MOTHER BOARD MOD 702 A2	A	1			Y	P	EA	1.00					
080	8000-2084-01	A	PCB ASSY-TERMINATION BOARD A1	A	1			Y	P	EA	1.00					

WIRING LIST WL 1143 - 02 REV F

DATE 6-28-78 ECO Nº 00751 SHEET 1 OF 2

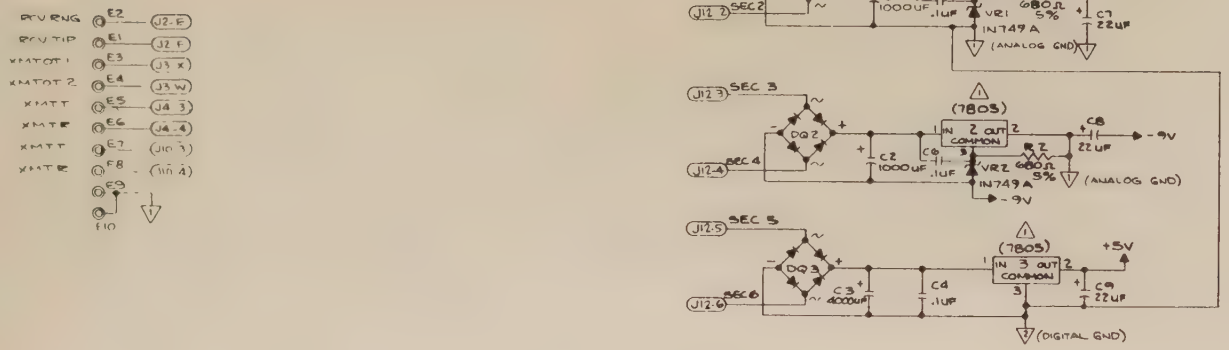
WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
24	Yel	15½"	LS1	1	P1	1	SPK DR
24	Org	15½"	LS1	2	P1	2	SPK GND
	Yel		T1	1	P2	2	+9V
	Wht/Yel		T1	2	P2	1	ANA GND
	Red		T1	3	P2	4	-9V
	Wht/Red		T1	4	P2	3	ANA GND
	Org		T1	5	P2	6	+5V
	Wht/Org		T1	6	P2	5	DIG GND
	Blk		P5	C	T1	1	Power Module
	Gry		P5	E	T1	2	" "
	Wht/Blk		P5	D	T1	3	" "
	Wht/Gry		P5	F	T1	4	" "
24	Yel	14"	P5	L	S1	2	Power Module
24	Vio	14"	P5	B	S1	3	Power Module
24	Brn	10½"	TB1	4	P3	1	RCV RND
24	Grn	10½"	TB1	3	P3	2	RCV TIP
24	ORG	22"	TB1	1	P4	2	XMT TIP
24	RED	22"	TB1	2	P4	1	XMT RNG
24	Org	12"	A2	E6	A2	E8	XMTR

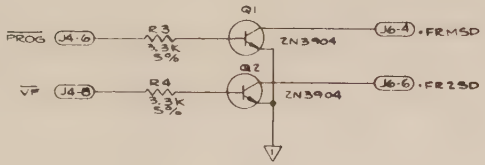
H06-1004-48

WIRING LIST WL 1143 – 02 REV SEE SHEET ONE

DATE SEE SHEET ONE ECO Nº SEE SHEET ONE SHEET 2 OF 2

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
24	Wht	3/4"	P5	N	P5	F	Power Mod
24	Yel	11"	A2	E7	A2	E5	
24	Grn	8½"	R1	1	A2	E10	Volume
24	Wht	14"	A1	E3	A2	E3	Term Board
24	Grn	14"	Shield		A2	E10	" "
24	Blk	14"	A1	E4	A2	E4	" "
24	Wht	8"	A1	E1	A2	E1	" "
24	Grn	8"	Shield		A2	E9	" "
24	Blk	8"	A1	E2	A2	E2	" "





2. FOR INTERCONNECTIONS SEE WL-1148-00

⚠1 IC1 THRU IC3 MOUNTED ON HEAT SINKS

NOTES - UNLESS OTHERWISE SPECIFIED:

ITEM NO.	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.

✓ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:

DECIMALS

ANGLES ± 1°

HOLES (DRILL) +.005 -.000

FINISH:

NEXT ASSY | QTY. REQ'D | QTY. FINAL | MODEL NO

HALCYON INC. 1071 VANDELL WAY CAMPBELL, CA 95008

MOTHER BOARD-
702

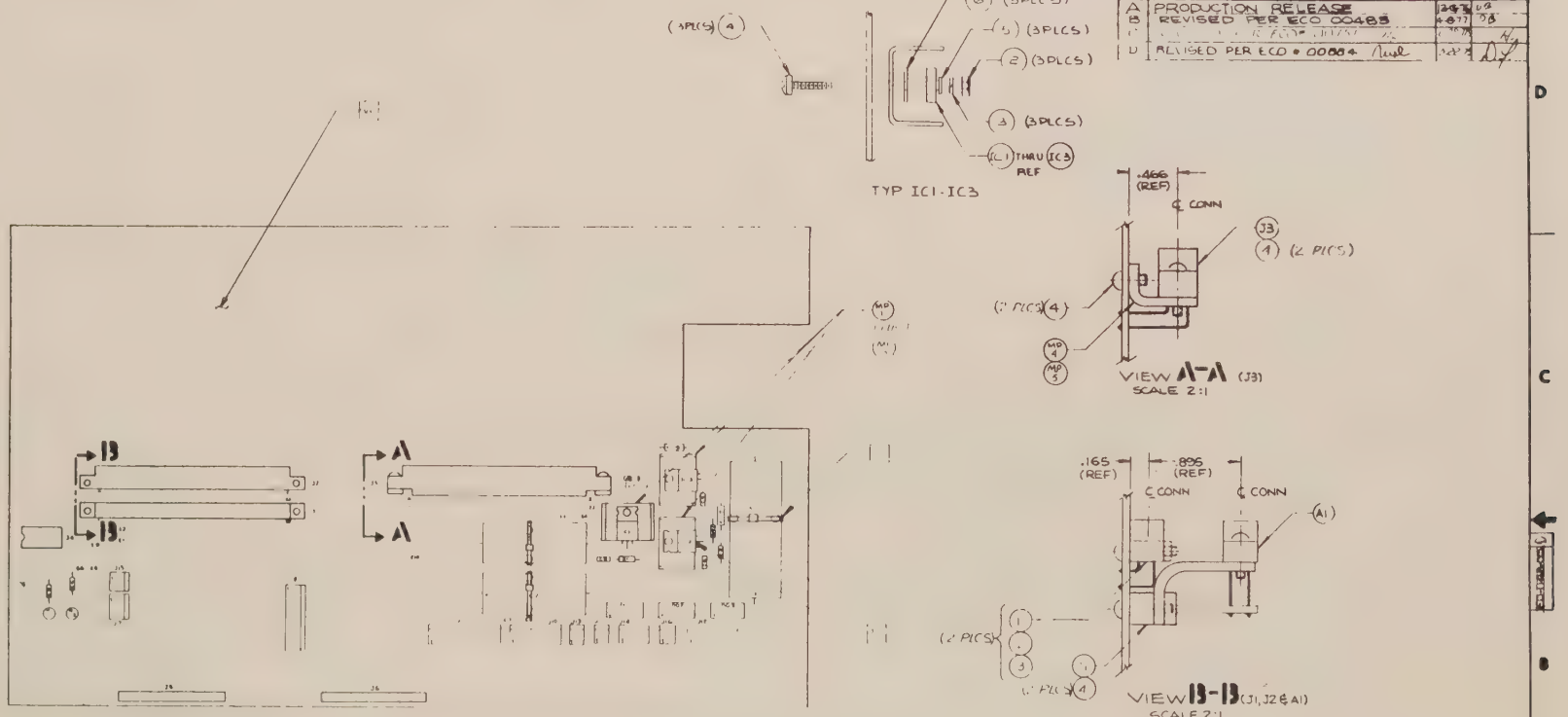
SIZE	DRAWING NO	REV
D	SD-1148-00	A

SCALE — | STOCK AB — | SHEET 1 OF 1

DO NOT SCALE DWG

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	12/5/78	DJS

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	2-8-77	
B	REVISED PER ECO 00485	4-8-77	
C	[illegible]	[illegible]	
D	REVISED PER ECO # 00884	1-27-78	



ITEM NO	PART OR IDENTIFYING NO	QTY REQ'D	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT
6	[illegible]	3	INSULATOR, #4			
5	2900-0023-00	3	WASHER-SHOULDER, #4			
4	2400-0125-00	1	SCREW, BINDERHD #4-40 x 5/8" LONG			
3	2800-0042-00	1	WASHER, SPLIT-LOCK, #4			
2	2500-0002-00	1	NUT-HEX #4-40			
1	[illegible]	1	SCREW-BINDERHD #4-40 x 1/2" LONG			

LIST OF MATERIAL OR PARTS LIST

[8] TO MODIFY FOR 48V CONVERSION JUMPER IC2 5 TO IC3 2
[7] TO MODIFY FOR 48V CONVERSION REMOVE THESE COMPONENTS FROM MOTHER BOARD: R1, R2, C1-9, VR1, VR2, XU1-4
6 LEADS TO BE TRIMMED WITHIN .062 FROM ENTIRE CIRCUIT SIDE OF P.C. BOARD
5 TIE WRAP C1, C2 & C3
4 SQUARE PAD DENOTES CATHODE END OF DIODE AND END OF CAP, EMITTER OF XSISTOR OR GATE OF FET
3 FOR WIRING LIST SEE WL-1148-00
2 FOR LIST OF MATLS SEE BOOK-1148-00
1 FOR SCHEMATIC DIAGRAM SEE [illegible]
NOTES: UNLESS OTHERWISE [illegible]

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.
63 FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON
DECIMALS .XX ± .010, .XXX ± .005
ANGLES ±1°
HOLES (DRILL) ±.1
FINISH
#4 NOTES

[illegible] VANCOUVER, WA. CAMPBELL, CA. [illegible]

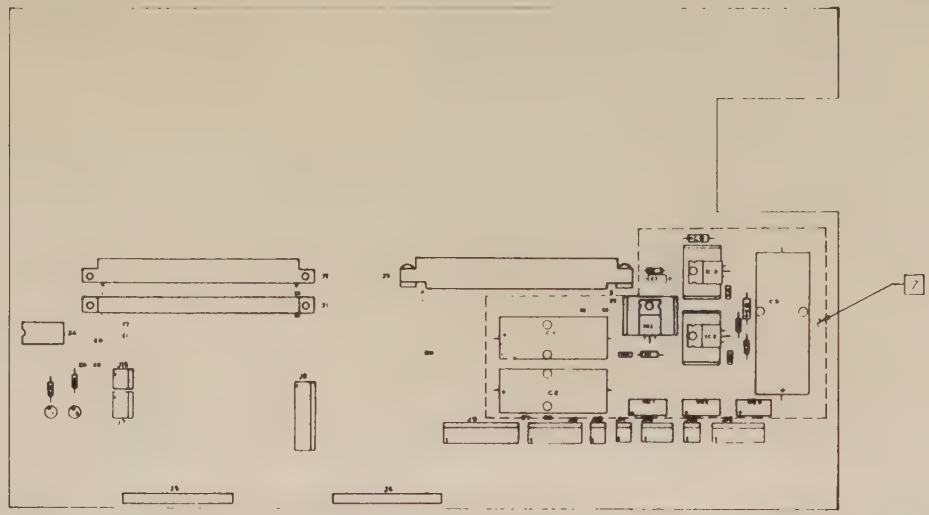
P.C. BOARD ASSEMBLY MOTHER BOARD (702)

NEXT ASSY	QTY NEXT	QTY FINAL	MODEL NO
[illegible]			702A

DRAWING NO D ED-1148-00 REV 0
SCALE [illegible] STOCK AB 8000 SHEET

ED-1148-00	2	C

REV	DESCRIPTION	DATE	APPROVED
C	SEE SHEET 1		



NOTES: SEE SHEET 1

	702A	
APPLICATION	DO NOT SCALE DRAWING	

PARTS LIST

CONTRACT NO

APPROVALS	DATE
Rack	6/9/78
CHECKED	
ISSUED	

P.C. BOARD ASSEMBLY MOTHER BOARD (702)

SIZE	FSCM NO	DWG NO	REV
D		ED-1148-00	D

SCALE 1X | STOCK AS BOOO | SHEET 2 OF 2

SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8000-1148-00 ASSY-MOTHER BOARD MOD 702 UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: B SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION	REMARKS	ENT REV CD	PR CD	S C E	T Y P	S T R	A P B	P L C	N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1501-0074-00	C-FXD CER .1UF 10% 100V	C4-6			P	1			C	P	EA	3.00					
010	1503-0125-00	C-FXD TA 22UF 10% 15WVDC	C7-9			P	1			C	P	EA	3.00					
015	1504-0233-00	C-FXD AL ELECT 4000UF 15V	C3			P	1			B	P	EA	1.00					
020	1504-0250-00	C-FXD AL ELECT 1000UF 25V	C1,2			P	1			B	P	EA	2.00					
025	1700-1148-00	PCB-MOTHER BOARD 702	PC1			P	1				P	EA	1.00					
030	2100-0086-00	CONN-RT ANGLE MTG	J3			P	1				P	EA	1.00					
035	2100-0125-00	CON-22PIN DUAL SHT DIP	J1			P	1			B	P	EA	1.00					
040	2100-0135-00	CON-22PIN DUAL RT ANGL	J2			P	1			B	P	EA	1.00					
045	2101-0007-00	CON 16 PIN CARRIER ASSY-	J4			P	1			B	P	EA	1.00					
050	2101-0013-01	CON-SNGL RT. ANGLE .100 SPACE	J5,6			P	1				P	EA	2.00					
055	2101-0014-02	CON-LOCK 2 PIN	J11,13,15,16			P	1			C	P	EA	4.00					
060	2101-0014-03	CON-LOCK 3 PIN	J7			P	1				P	EA	1.00					
065	2101-0014-04	CON-LOCK 4 PIN	J14			P	1			C	P	EA	1.00					
070	2101-0014-06	CON-LOCK 6 PIN	J10,12			P	1			C	P	EA	2.00					
075	2101-0014-08	CON-LOCK 8 PIN	J8			P	1			C	P	EA	1.00					
080	2101-0014-09	CON-LOCK 9 PIN	J9			P	1			C	P	EA	1.00					
085	2500-0002-83	BRKT-CBC CONN	MP4,5			P	1				P	EA	2.00					
090	3131-0101-00	IC-UA7805 REGULATOR 5V	IC1-3			P	1			B	P	EA	3.00					
095	4700-0393-00	R-FXD CC 680 OHM 5% 1/4W	R1,2			P	1			C	P	EA	2.00					
100	4700-0409-00	R-FXD CC 3300 OHM 5% 1/4W	R3,4			P	1			C	P	EA	2.00					
105	4800-3904-00	TSTR-NPN SI SM 2N3904	Q1,2			P	1			C	P	EA	2.00					
110	4802-0749-00	DIODE-ZENER 4.3V IN749A	VR1,2			P	1				P	EA	2.00					
115	4803-0005-00	RECTIFIER-BRIDGE 1A	D1-3			P	1			B	P	EA	3.00					
120	4804-0001-00	HS-HEATSINK-TSTR	MP1-3			P	1			C	P	EA	3.00					
125	8000-0001-61	ASSY DIGITAL EXTENDER BD	A1	A		A	1		Y	P	EA		1.00					

WIRING LIST WL 1148 – 00 REV A

MOTHER BOARD 702

DATE _____ ECO Nº _____ SHEET 1 OF 7

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
			J1	U	J3	R	LOGWND
			J1	8	J3	K	UNDRNG
			J1	J	J3	L	OVRRNG
			J1	19	J3	S	$\overline{\text{FRQ}}$
			J1	18	J2	S	$\overline{\text{VF}}$
			J2	S	J4	8	
			J4	8	R4		
			J1	4	J1	D	+5V
			J1	D	J5	G	
			J5	6	IC3	2	
			J1	1	J1	A	DIGGND
			J1	A	IC3	3	
			J1	3	J1	C	-9V
			J1	C	J2	3	
			J2	3	J2	C	
			J2	C	J3	3	
			J3	3	J3	C	
			J3	C	VR2	Anode	
			J1	H	J2	M	$\overline{\text{LEVEL}}$
			J2	M	J8	1	
			J1	7	J3	N	OUTRNG
			J1	5	J3	21	$\overline{\text{QUIET}}$
			J3	21	J9	4	

WIRING LIST WL 1148 — 00 REV See Sheet 1

DATE _____ ECO Nº See Sheet 1 SHEET 2 OF 7

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
			J1	F	J2	P	$\overline{\text{XMT}}$
			J2	P	J8	5	
			J1	13	J3	P	ENDMES
			J1	12	J2	21	AGC40
			J1	6	J2	22	AGC
			J1	14	J6	7	FRQ A
			J1	S	J6	15	FRQ B
			J1	15	J6	13	FRQ C
			J1	16	J6	10	FRQ D
			J1	T	J6	9	FRQ E
			J1	P	J6	8	FRQ F
			J1	R	J6	14	FRQ G
			J1	22	J6	16	FRQ LSD
			J1	21	J6	11	FRQ 1SD
			J1	X	J6	5	FRQ 2SD
			J1	20	J6	3	FRQ MSD
			J1	9	J5	10	LEV A
			J1	M	J5	18	LEV B

WIRING LIST WL 1148 — 00 REV See Sheet 1

DATE _____ ECO No See Sheet 1 SHEET 3 OF 7

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN No	DESIGNATOR	PIN No	
			J1	10	J5	16	LEV C
			J1	11	J5	13	LEV D
			J1	N	J5	12	LEV E
			J1	K	J5	11	LEV F
			J1	L	J5	17	LEV G
			J1	Y	J5	8	LEV MSD
			J1	Z	J5	14	LEV 1SD
			J1	W	J5	19	LEV LSD
			J1	E	J5	15	DEC LEV
			J1	V	J5	3	NEG SGN
			J1	17	J5	2	POS SGN
			J5	2	J5	4	
			J2	F	E1		RCV TIP
			E1		J15	1	
			J15	1	J7	2	
			J2	E	E2		RCV RNG
			E2		J15	2	
			J15	2	J7	1	
			J3	X	E3		XMTOT1
			J3	W	E4		XMTOT2

WIRING LIST WL 1148 – 00 REV See Sheet 1

DATE _____ ECO Nº See Sheet 1 SHEET 4 OF 7

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
			J2	1	J2	A	ANAGND
			J2	A	J3	1	
			J3	1	J3	A	
			J3	A	J4	14	
			J4	14	J7	3	
			J7	3	J8	2	
			J8	2	J14	3	
			J14	3	IC2	2	
			J9	3	J3	15	XMTLOW
			J2	J	J4	13	RCV 900
			J3	Z	J4	15	XMT 600
			J2	17	J4	6	$\overline{\text{PROG}}$
			J4	6	R3		
			J2	R	J4	9	$\overline{\text{WGTD}}$
			J3	11	J4	10	VFCAP
			J3	12	J4	12	PRCAP
			J2	N	J3	19	$\overline{\text{REC}}$
			J3	19	J8	6	

WIRING LIST WL 1148 – 00 REV See Sheet 1

DATE _____ ECO Nº See Sheet 1 SHEET 5 OF 7

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
			J2	K	J8	3	$\overline{\text{NOTCH}}$
			J2	L	J8	4	$\overline{\text{NOISE}}$
			J2	5	J3	5	+VREF
			J2	6	J3	6	-VREF
			J2	2	J2	B	+9V
			J2	B	J3	2	
			J3	2	J3	B	
			J3	B	IC1	2	
			J2	H	J3	T	RCV OUT
			J2	20	J16	2	ARNGIN
			J2	19	J3	M	SIGMES
			J3	10	J9	8	VCO IN
			J3	V	J9	6	$\overline{\text{1004 Hz}}$
			J3	U	J9	5	$\overline{\text{OSC}}$
			J3	22	J9	2	XMT LEV
			J3	E	J16	1	SPK IN
			J3	J	J10	2	HOLD 1
			J3	7	J10	1	HOLD 2

WIRING LIST WL 1148 – 00 REV See Sheet 1

DATE _____ ECO Nº See Sheet 1 SHEET 6 OF 7

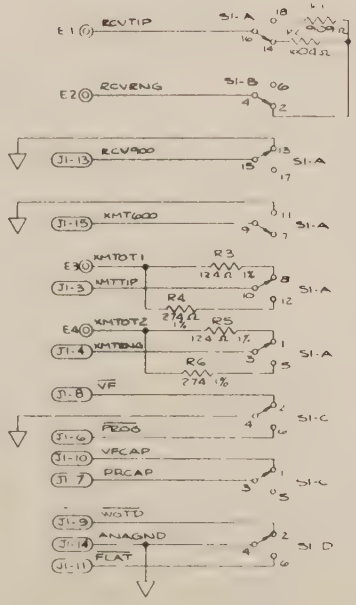
WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
			J3	20	J9	1	XMTDRV
			J3	F	J14	4	SPK DRV
			J3	13	J9	7	VCO LOW
			J6	4	Q1	Collector	FRMSD
			J6	6	Q2	Collector	FR2SD
			J12	1	DQ1	Sign 1	SEC 1
			J12	2	DQ1	Sign 2	SEC 2
			J12	3	DQ2	Sign 1	SEC 3
			J12	4	DQ2	Sign 2	SEC 4
			J12	5	DQ3	Sign 1	SEC 5
			J12	6	DQ3	Sign 2	SEC 6
			J13	1	J10	5	XMT TIP
			J13	2	J10	6	XMT RNG
			J4	3	E5		XMTT
			E5		E7		
			E7		J10	3	
			J4	4	E6		XMTR
			E8		J10	4	

WIRING LIST WL 1148 – 00 REV See Sheet 1

DATE _____ ECO Nº See sheet 1 SHEET 7 OF 7

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
			J2	T	J8	8	XMTSIG
			J3	Y	J8	7	SIGXMT
			J14	2	J11	2	SPKGND
			J14	1	J11	1	SPKDR
			J9	9	J3	14	VCOHI

REVISIONS			
SYM.	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	11 16 76	DB



1. ALL RESISTORS ARE IN OHMS 1/8W 1%
NOTES UNLESS OTHERWISE SPECIFIED:

ITEM NO.	PART OR IDENTIFYING NO.	QTY REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE	SPECIFICATION	CODE IDENT.

LIST OF MATERIAL OR PARTS LIST

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.

63 √ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED

TOLERANCES ON:

DECIMALS

ANGLES ±1°

HOLES (DRILL) +.000 -.005

FINISH

NEXT ASSY | QTY. NEXT | QTY. FINAL | MODEL NO.

HALCYON INC. 501 VANDELL WAY CAMPBELL, CA 95008

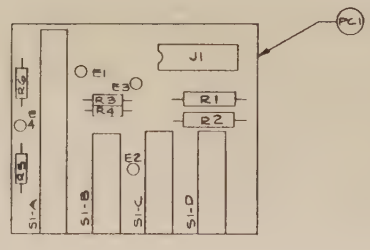
TERMINATION BOARD

DATE 3 MAY 76 | SIZE D | DRAWING NO. SD-2084-01 | REV. A

BY | APPROVED | DRAWN | SCALE — | STOCK AS — | SHEET 1 OF 1

DO NOT SCALE DRWG

REVISIONS			
A	PRODUCTION RELEASE	11-16-76	
B	REVISED PER ECO # 00876	1-29-79	



5 WIRE LISTS.
A) FOR APPLICATION ON 701A SEE WL-2084-01
B) FOR APPLICATION ON 702A SEE WL-2084-02
2. FOR LIST OF MATERIALS SEE 8000-2084-01
1. FOR SCHEMATIC SEE SD-2084-01

NOTES-UNLESS OTHERWISE SPECIFIED

ITEM NO.	PART OR IDENTIFYING NO.	QTY. REQ'D.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR PARTS	SPECIFICATION
			LIST OF MATERIAL OR PARTS LIST		
EDJ143-02	1	—	702A		
EDJ122-24	1	—	701A		
REQT'D ASSY	QTY. REQ'D	QTY. PROD.	MODEL NO.		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS BEFORE PLATING. BREAK ALL SHARP CORNERS.
√ FINISH ON ALL MACHINED SURFACES EXCEPT AS NOTED
TOLERANCES ON:
DECIMALS
ANGLES ±1°
HOLES (DRILL) ±.005
FINISH: SEE NOTES

HALCYON INC. 301 VANDELL WAY CAMPBELL, CA 95008

PCB ASSY
TERMINATION BD.

SIZE D | DRAWING NO. ED-2084-01 | REV B
SCALE 2X | STOCK AS 8.00

SINGLE LEVEL BILLS OF MATERIAL

PARENT PART: 8000-2084-01 PCB ASSY-TERMINATION BOARD UM: EA PROD CODE: ECN: ASSEMBLY QTY: 1
ERC: A SRCE CODE: A DATE: 00-XXX-00

ITEM NO.	COMPONENT PARTS	PART DESCRIPTION	REMARKS	EDT REV CD	FR CD	C E	Y P	S / S P R	A B C	P L N	UM	EXTENDED QTY PER	ECN CHG	START DATE	START S/N	CLOSE DATE	CLOSE S/N
005	1700-2084-01	PCB-TERMINATION BOARD	PC1				P	1		P	EA	1.00					
010	2101-0007-00	CON-16 PIN CARRIER ASSY-	J1				P	1		B P	EA	1.00					
015	4703-0106-00	R-FXD MF 124 OHMS 1% 1/8W	R3,5				P	1		P	EA	2.00					
020	4703-0139-00	R-FXD MF 274 OHM 1% 1/8W	R4,6				P	1		C P	EA	2.00					
025	4705-0172-00	R-FXD MF 604 OHM 1% 1/2W	R2				P	1		C P	EA	1.00					
030	4705-0189-00	R-FXD MF 909 OHM 1% 1/2W	R1				P	1		C P	EA	1.00					
035	5100-0128-01	SWITCH-PUSHBUTTON 4 STA	S1				P	1		P	EA	1.00					

WIRING LIST WL 2084 - 01 REV A

DATE 4-6-72 ECO Nº 00734 SHEET 1 OF 1

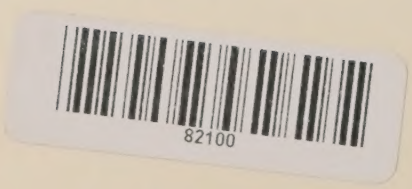
WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN Nº	DESIGNATOR	PIN Nº	
CA1	WHT	7"	ED-2084-01	E1	ED-1103-01	E16	RCV TIP
CA1	BLK	7"	ED-2084-01	E2	ED-1103-01	E15	RCV RNG
24AWG	GRN	5"	CA1	Shield	J3	1	GND
CA2	WHT	9"	ED-2084-01	E3	ED-1103-01	E10	XMTOT1
CA2	BLK	9"	ED-2084-01	E4	ED-1103-01	E11	XMTOT2
24AWG	GRN	2½"	CA2	Shield	J2	1	GND
			CA1 & CA2 are 2 conductor shielded cable				

WIRING LIST WL 2084 - 02 REV A

DATE 4-6-78 ECO № 00734 SHEET 1 OF 1

WIRE			FROM		TO		FUNCTION
SIZE	COLOR	LENGTH	DESIGNATOR	PIN №	DESIGNATOR	PIN №	
CA1	WHT	8"	ED-2084-01	E1	ED-1148-00	E1	RCV TIP
CA1	BLK	8"	ED-2084-01	E2	ED-1148-00	E2	RCV RNG
24AWG	GRN	5"	CA1	Shield	ED-1148-00	E10	GND
CA2	WHT	16"	ED-2084-01	E3	ED-1148-00	E3	XMTOT1
CA2	BLK	16"	ED-2084-01	E4	ED-1148-00	E4	XMTOT2
24AWG	GRN	2½"	CA1	Shield	ED-1148-00	E10	GND
			CA1 & CA2 are 2 conductor shielded cable				

H06-1004-4B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